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NEUROLOGIC SIGNS AND THEIR DISCOVERERS *

GEORGE W. HALL, M.D.
CHICAGO

I have briefly reviewed some of the more common neurologic signs with the hope that, by including a history of their discovery, such signs may be more deeply impressed on the minds of those who are not so familiar with their significance and value as employed in their own specialty. The neurologists have been accused of using too freely the names of discoverers of these neurologic signs as a means of denoting organic change. Such names in themselves have no meaning as far as the underlying pathologic condition is concerned, and in the opinion of the general practitioner the method is much abused. In reply, one might say that such terms as the "acute abdomen" so frequently employed by the surgeons are also much abused and rather meaningless as far as expressing a diagnosis is concerned.

ARGYLL ROBERTSON PUPIL

Douglas Moray Cooper Lamb Argyll Robertson was born in Edinburgh in 1837 and died in 1909[1] while visiting in the home of a native Indian prince who had been one of his students in medicine. His father was an ophthalmic surgeon and two paternal uncles were also surgeons. He was educated at Edinburgh, St. Andrews and Berlin, where he studied ophthalmic surgery under von Graefe. He was one of the few men who from the beginning of his career devoted himself exclusively to ophthalmic surgery. He was a highly social and genial man, a devotee of golf, archery, shooting and curling, and a man of distinguished looks and splendid physique.

His first description of the Argyll Robertson pupil was published in 1868.[2] It was in the case of a carver, aged 59, who complained of dimness of sight in both eyes, all the symptoms of spinal disease such as weakness, cramps and numbness in the legs, unsteady gait, difficulty in retaining urine and inability to support himself when in the dark or with his eyes closed. He states: "I found both pupils were pin-point in size, the right smaller, but I could not observe any contraction of either pupil under the influence of light, but on accommodating the eyes on a near object both pupils contracted." In this article he does not go further into the absence of contraction to light, but in later articles he speaks of four cases of spinal myosis.[3] Consequently this is the first mention of one of the earlier signs of locomotor ataxia.

ROMBERG SIGN

Romberg was born in Meiningen, Germany, in the year 1795.[4] He was the son of a merchant, brought up from early childhood in Berlin, and studied at the university under such eminent teachers as Gräffe, Horn and Lichtenstein. While his chief writings were on cerebral hemorrhage, neuralgia of the fifth nerve and Asiatic cholera, he translated a great many articles into German. In his teaching he demonstrated with actual patients, which was rather unusual in Germany at that time; and he is today still regarded as the founder of scientific neurology in Germany.

The first description of his sign was in 1840.[5] In the full description of a case of tabes dorsalis appears the following: "From the beginning he (the patient) must see his movements if they are not to become still more uncertain. If one has him close his eyes when in an upright position he at once begins to sway and reel; likewise, when it is dark around him, he betrays greater uncertainty in standing and walking. This pathognomonic characteristic—for it is seen, according to my observations, neither in other paralyses nor in amaurosis free of complications—I have observed during the past ten years, and I have not found it absent in a single one of the not inconsiderable number of such patients who have come to me from far and near."

LOSS OF ABDOMINAL REFLEXES

Eduard Müller was born in 1876 at Anweiler, Germany.[6] He studied at Marburg, also at Heidelberg and Kiel. He held appointments at the psychiatric clinic at the University of Frieburg, at the Senckenberg Institute at Frankfort and at Breslau, where he was associated with Strümpell. Among his writings is a monograph on multiple sclerosis of the brain and cord. In that article, first published in 1905,[7] he emphasized the importance of early symptoms to be observed in multiple sclerosis. The behavior of abdominal reflexes was first credited to him, but he refers to Strümpell as being the first one to observe the absence of abdominal reflexes in multiple sclerosis, though he did not refer to any special article of Strümpell's in that connection. In this article, however, he states that the abdominal reflexes cannot be obtained in an overwhelming majority of early cases of multiple sclerosis. Its absence on one side, according to the author, signifies little, since this occurs in spinal and cerebral hemiplegias of various origins, but its

* Chairman's address, read before the Section on Nervous and Mental Diseases at the Eighty-First Annual Session of the American Medical Association, Detroit, June 26, 1930.

1. Biographical material from Obituaries in British Medical Journal **1**: 191, 1909; and Ophthalmoscope **7**: 135, 1909.
2. Robertson, D. A.: Edinburgh M. J. **14**: 696, 1868.
3. Robertson, D. A.: Edinburgh M. J. **15**: 487, 1869.
4. Obituary in Berliner klinische Wochenschrift **10**: 289, 1873; and from account of the celebration of the fiftieth anniversary of receiving the doctorate, Deutsche Klinik **19**: 109, 1867.
5. Lehrbuch der Nervenkrankheiten des Menschen, 1840, p. 795.
6. Biographical note from Wer Ist's? 1928.
7. Müller, Eduard: Neurol. Centralbl. **24**: 593, 1905.

absence on both sides is highly important. Oppenheim's statements that the abdominal reflex is very inconstant even in healthy subjects is, in his opinion, incorrect. He wrote:

With my assistant Dr. Seidelmann I made mass examinations on the two infantry regiments of Breslau recently, and although only a single test was made in each case, in only a single case did the abdominal reflexes appear to be absent. I can affirm with certainty that in young and otherwise healthy persons with normal abdominal walls the abdominal reflexes are constantly demonstrable. In the early stages of multiple sclerosis, we only exceptionally find relaxed abdominal walls and a large amount of panniculus adiposis, with which these reflexes occasionally disappear, even normally. A careful testing with a good technic is necessary; particularly deceptive are tonic spasms, either active or reflex, of the abdominal muscles, such as are not unusual in nervous and sensitive patients during examination, in acute inflammatory and painful abdominal diseases, and marked intensification of muscle tonus; these sometimes conceal the reflex. A certain relaxation of the abdominal musculature which you may obtain by the various means of diverting attention, rapid and long strokes over the skin of the abdomen (the point of a not too sharp pencil or of a blunt pointed needle is best), and if necessary repeated examination in the standing position, is necessary for a sufficiently thorough examination.

He also remarks that the cremaster reflexes are usually absent in the early stages of multiple sclerosis.

BABINSKI SIGN

Joseph Babinski was born in Paris in 1857.[8] He is of Polish descent. He was one of the founders of the Société de neurologie and the head of the clinic of Salpêtrière. This sign was described by the author first in 1896,[9] under the title "On the Cutaneous Plantar Reflex in Certain Organic Affections of the Central Nervous System." He goes on to describe this sign as follows:

In a certain number of cases of hemiplegia or crural monoplegia associated with an organic affection of the central nervous system I have observed a perturbation in the cutaneous plantar reflex of which the following is a brief description: On the healthy side, pricking the plantar surface of the foot provokes, as is usual in the normal state, flexion of the thigh on the pelvis, of the leg on the thigh, of the foot on the leg and of the toes on the metatarsus. On the paralyzed side a similar excitation gives rise also to flexion of the thigh on the pelvis, of the leg on the thigh, and of the foot on the leg; but the toes, instead of flexing, execute a movement of extension on the metatarsus. I have observed this disturbance in cases of recent hemiplegia of only a few days' duration, as well as in cases of spastic hemiplegia that had existed for several months; I have demonstrated it in patients who were incapable of voluntary movement of the toes and also in subjects who could still execute voluntary movement of the toes; but I must add that this disturbance is not constant. I have also observed in a number of cases of crural paraplegia due to an organic lesion of the cord a movement of extension of the toes following pricking the sole of the foot.

Of course, the present interpretation of a positive Babinski sign is an extension of the great toe and the flexion of the other toes when the sole of the foot is irritated. When such a reaction takes place, it signifies an organic lesion involving the upper neuron.

BRUDZINSKI'S SIGN

The Brudzinski sign is one that is especially looked for in cases involving the meninges. Brudzinski was of Polish descent; he was born in 1874 and died in 1917.[10] At the time of his death he was the rector of the University of Warsaw and chief physician to the hospital Karl and Maria. There is no statement that he had previously held any academic position. There are, unfortunately, three or four signs known as Brudzinski's sign. The first sign, which he[11] described in 1908 is known as the "contralateral reflexes in the lower extremities in children." This sign will be given only brief mention. He discovered the sign while examining a child, aged 9 months, who had tuberculous changes in the legs as well as changes in the central nervous system. The left lower extremity was definitely paretic, and only certain movements were retained. The left upper extremity was always held in incomplete adduction and total flexion. When, having flexed the right extremity at the knee joint, he continued to flex the hip joint until the thigh almost touched the abdomen, he then noticed a reflex extension of the left extremity which was at the time flexed at the knee. Control experiments on healthy children, both infants and older children, were negative as far as this sign was concerned.

The sign usually spoken of as Brudzinski's sign was first described in 1909[12] under the title "A New Sign in Lower Extremities in Meningitis in Children" (the "neck sign").

The Neck Sign.—In this article he states: "Passive flexion of the neck in a forward direction causes flexion of the lower extremities in the articulations of the knee and of the femur, and the limbs sometimes execute a very extensive flexion on the pelvis." In the cases studied, the diagnosis of meningitis was confirmed by lumbar puncture and examination of the cerebrospinal fluid and in some cases by autopsy. In all of eight cases of serous meningitis the "neck sign" was positive. In reporting a series of cases he states that Kernig's sign was positive in 61 per cent, Babinski's sign in 52 per cent, the contralateral reflex sign in 52 per cent, while the "neck sign" was present in 95 per cent of the cases of tuberculous meningitis. In cerebrospinal meningitis the "neck sign" was present in 100 per cent of the cases. In serous meningitis it was present in 100 per cent of cases, and likewise in pneumococcus meningitis. Therefore in all four varieties, the Kernig sign was present in 57 per cent, Babinski sign in 50 per cent, contralateral reflex sign in 66 per cent, and the "neck sign" in 97 per cent. He further states in this article that in cases of meningism in which the Babinski sign was present on both sides the "neck sign" could not be produced. The technic employed by the author was as follows:

The child lies horizontally on his back; one takes the neck in the left hand and flexes the head and neck, resting the right hand on the child's chest to prevent it from raising itself up. In very young children there may be difficulty in keeping the limbs in extension on account of their restlessness; in this case one generally restrains the limbs in the region of the knee joint. To avoid errors, repeated examination should be made.

The author is unable to give us sufficient explanation of the origin of the sign. He states that it cannot be the increased pressure in the cerebral canal that plays the chief rôle, since the sign was not found in hydrocephalus with greatly increased pressure. The spastic state of the lower limbs seems to play an important part; but flexion of the extremities on the pelvis is marked, also, in cases of tuberculous meningitis in which the spastic condition scarcely exists. The sign was not found in cases of Little's disease examined. In normal infants flexion is sometimes painful and the children struggle

8. Biographic information obtained from Qui Êtes Vous and from Nouveau Larousse.
9. Babinski, Joseph: Compt. rend. Soc. de biol. **48**: 207, 1896.
10. Deutsche med. Wchnschr. **43**: 1622 (Dec. 27) 1917.
11. Brudzinski, J.: Wien. klin. Wchnschr. **21**: 255 (Feb. 20) 1908.
12. Brudzinski, J.: Arch. de méd. d. enf. **12**: 721 (Oct.) 1909.

with their feet, but the movements are disordered and are merely movements of defense. It is probable, according to the author, that the most important rôle is played by a muscular hypertonia of the lower extremities and a physiologic predominance of the extensor muscles of the neck and the back over the flexor muscles of the lower limbs.

Incidentally, Brudzinski later described other signs indicating inflammation and irritation of the meninges in children, particularly in tuberculous meningitis.[13] Two signs were known as the "cheek sign" and the "symphysis phenomenon."

The cheek phenomenon consists in rapid reflex raising of both upper extremities with simultaneous flexion of the elbow joints and elicited by pressure on both cheeks just below the zygomatic bone. He examined 254 children, healthy and sick, for this sign; out of forty-two cases of tuberculous meningitis the sign was positive in forty-one, while in nontuberculous meningitis the cheek sign was less often positive. In the course of these investigations he found the other sign: Pressure with the thumb and index finger over the symphysis pubis causes contraction of both lower extremities. In twenty-one cases of tuberculous meningitis this sign was invariably present. While the pressure on the symphysis pubis is usually painful to sick patients, in control cases without signs of meningitis, pressure was painful but the phenomenon was absent. It must be kept in mind, however, that the sign generally known as Brudzinski's sign is the so-called "neck sign" as just described.

KERNIG'S SIGN

Another valuable contribution to neurologic diagnosis was made by Waldemar Kernig, who was born in St. Petersburg in 1840 and died in 1917.[14] Educated at Dorpat under A. Wachsmuth, he became associated with the Obuchow Hospital (St. Petersburg) immediately on graduation. He held various teaching and consulting positions in other institutions.

In 1884 Kernig[15] wrote an article the title of which was "On a Little Known Symptom of Meningitis." In this article he said:

> In the majority of cases of meningitis, contractures are not present in the extremities while the patient is lying down, whereas if one tries to extend the knee while the patient remains sitting, one succeeds only to an angle of about 135 degrees. In cases in which the phenomenon is pronounced, a right angle is maintained. The phenomenon is so striking that the difference between the entire absence of this contracture in the reclining position and its presence in the sitting position is so readily seen that it is worth while to pay particular attention to this symptom and to look for it in every case.

He found further that, if a patient while lying in bed makes the attempt to bring the extended lower extremity up to a right angle with the trunk, the contracture appears at a degree of flexion of the thigh on the trunk at which in any other patient there is no sign of tendency to flex the leg on the thigh. He found, furthermore, that, in cases of cerebrospinal meningitis, when the patient was lying on his side with thighs drawn up and these were fixed in that position, the phenomenon was present but disappeared when the patient was replaced on his back and the thighs were extended. Kernig[16] called attention to this symptom at a meeting of the general union of St. Petersburg physicians in 1882. He reports in more or less detail several cases of meningitis that presented his sign. Up to that time he had never found the sign described in the literature.

KORSAKOFF'S SYNDROME

Korsakoff was professor of clinical psychiatry at the University of Moscow for a number of years.[17] He had no time for personal life—he worked regularly sixteen hours a day. In addition to the obligatory courses at the clinic, he held several supplementary courses. He had a large practice, but, although it rested only with him to have the richest practice in Moscow, he died leaving scarcely anything. He gave largely, especially to the Society for the Protection of Poor Students. He was the first to introduce the "no restraint" method into Russia (1881), when he was director of a private institution for the mentally diseased. At this time the care of the mentally ill throughout Russia was very bad. After he was placed at the head of the Psychiatric Clinic, Korsakoff commenced by abolishing cells for the restraint of the patients. He was preparing a visit to Paris to attend the congress of psychiatrists and to present his report on the bed treatment of patients mentally ill, but his death prevented this presentation. He organized the Psychiatric Clinic of Moscow; he was the founder of the society of alienists and neurologists of Moscow. He wrote a treatise on alcoholic paralysis and he understood the value of hypnotism in the treatment of psychopathic patients.

An article (in abstract) describing the Korsakoff syndrome appeared[18] first in 1887 entitled "A Special Form of Psychic Disturbance Combined with Multiple Neuritis." His description is as follows:[19]

> The psychic disturbance is expressed sometimes in irritable weakness of the psychic sphere and sometimes in the form of confusion, with extremely characteristic false conception as to place, time and situation, in which memory for the immediate past is disturbed in an intensive manner, while memory for events long past is well retained. This psychic change is almost always present in greater or less degree in multiple neuritis of alcoholics. It does not, however, belong exclusively to alcoholic neuritis but is found also in other neuritides of various geneses.

In addition to the symptoms mentioned here, he also speaks of the patient's tendency to fabricate. It was his opinion, as it is also the opinion of neurologists today, that the cause is some form of intoxication which affects the function of the brain in a particular manner and causes also multiple disease of the peripheral nerve trunks. He notes that some combined symptoms have been observed in various infectious diseases after poisoning from arsenic or lead, or following childbirth.

Following the publication of Korsakoff's paper, David Finlay[20] delivered an address before the Royal Medical and Chirugical Society in 1887 reporting three cases of alcoholic paralysis (multiple neuritis). His comments were as follows:

> The patients ramble in their talk and have delusions. The mental condition is often characteristic and helps to differentiate this form of neuritis. There are many varieties of delusion or hallucination. Some patients will say they have been walking about, when they have been lying in bed all the time. One

13. Brudzinski, J.: Berlin klin. Wchnschr. **53**: 686 (June 19) 1916.
14. From Bibliographisches Lexikon hervorragender Aerzte des Neuzehntenjahrhunderts, 1901, p. 1.
15. Kernig, Waldemar: Berlin. klin. Wchnschr. **21**: 829, 1884.
16. Kernig, Waldemar: St. Petersb. med. Wchnschr. **7**: 398, 1882.
17. Rev. de psychiat. **3**: 188, 1900. Revue de l'hypnotisme et de la psychologie physiologique **15**: 128 (Oct.) 1900.
18. Abstract (in German) in Neurologische Centralblatt **6**: 210, 345, 1887.
19. Korsakoff, Sergei: Arch. f. Psychiat. u. Nervenkr. **21**: 669, 1890.
20. Finlay, David: Brit. M. J. **1**: 1162 (May 28) 1887.

outpatient, when he came to the hospital, always imagined he was in some familiar market; other patients would tell detailed stories which had no foundation whatever.

LASÈGUE'S SIGN IN SCIATICA

Charles Ernest Lasègue was born in Paris in 1816 and died in that city in 1883.[21] A comparison of the biographies of the different neurologists mentioned in this paper yields none so interesting as is Lasègue's. Before studying medicine, he was professor of rhetoric in a school in Paris. He took up the study of medicine in 1839 and completed his doctor's degree in 1846. He was chief of clinic, professor of general pathology and a clinical professor in 1869. An anonymous writer of Lasègue's obituary thinks that he would have made even a more brilliant name had he remained professor of literature, where his high qualities would have shown while his defects would not have shown; the defects were a tendency to be preoccupied with form rather than with exactitude of expression, with the picturesque rather than the true; he saw quickly and always lacked patience in observation. He became Trousseau's pupil and the head of Trousseau's clinic. These two men were very much alike, and Lasègue modeled himself on Trousseau. The former had, however, according to this writer, more good sense and more tact than the latter. Lasègue, however, was the most devoted and the one most taken note of by his master. He followed Trousseau in the chair of pathology at the University of Paris.[22] Imbued with the practical spirit of his master, he attached himself to the school of what would now be called clinicians. He interested himself in psychiatry and made special observations on delirium of persecution and alcohol delirium. On the latter subject his monographs are without equal. In teaching, Lasègue spoke familiarly, apparently without preparation, in lively, imaginative, picturesque language. He was not inclined to theories but held to the facts viewed in their entirety and not in one of their end-results. He was considered a great bedside clinician. I am sorry that time does not permit further elaboration on him as a teacher and physician. Strange to say, however, Lasègue never wrote an article concerning his sign, although both Lewandowsky and Oppenheim (in their textbooks) mention him as having described the sign in 1864. The fact is that the first description of this phenomenon was published by Forst,[23] who was one of his pupils, in 1881. He describes the sign as follows:

> The patient is made to lie down in a dorsal position, the examiner taking the patient's foot in one hand placed under the heel. The other hand is placed on the knee of the same limb. Keeping the limb extended, the examiner flexes the thigh on the pelvis. It suffices to raise the limb only a few centimeters to cause intense pain in the region of the sciatic notch, at the point of the emergence of the nerve. It has been said that the patient feels severe pain when the thigh is flexed on the pelvis with the limb extended, but if we flex the leg on the thigh we can flex the thigh on the pelvis without the patient's feeling any pain at all.

Forst points out that if a normal person attempts to flex the thigh on the pelvis with the limb in extension a certain difficulty is experienced, with a sensation of pulling in the gluteal region; one feels that the nerve is being stretched. If, on the other hand, one flexes the leg on the thigh, not only can one flex the thigh on the pelvis to a greater degree, but also the vague sensation of pulling is absent. Forst stated that the opinion of his teacher Lasègue is that the severe pain that the patient feels on performance of the test is caused by compression exerted on the sciatic nerve by the muscular mass. Lasègue never failed to examine for this sign in any patient who complained of difficulty in walking and pain along the thigh. This was the sign which he looked for first, and his further examination was based on its presence or absence. It is truly pathognomonic. No other disease of the lower extremities presents a similar symptom.

THE OPPENHEIM SIGN

The Oppenheim sign was first described in 1902. Oppenheim was born in Warburg in 1858 and died in Berlin in 1919.[24] He studied medicine at Göttingen, Bonn and Berlin, where he came under the influence of Westphal. A brief sketch of his work has been published by Cassirer, his student. In his biographic notes the latter states that Oppenheim substituted for Westphal during his long illness, and after Westphal's death Oppenheim left the Charité and founded his own clinic. From that time on he did not have great opportunities to teach. State institutions gave him no place. Althof refused him the position of professor extraordinary, to which the faculty had unanimously nominated him. These difficulties, however, did not prevent his rise to the position of leader of German neurology. He carved out his scientific career independently. There was no subject of organic neurology on which he did not write. His textbook on neurology still remains among the first in its simplicity of language and richness of thought. Oppenheim always held the physical trauma to be only partly responsible, and the psychic trauma to play the chief rôle in his study of traumatic neuroses. His phenomenon is described as follows:[25]

> If one draws the handle (or shaft) of a percussion hammer over the inner surface of the leg from the upper margin of the tibia downward, one sees in healthy persons either no movement at all in the foot and toes or else a plantar flexion of the toes. If the irritation is made strong enough, distinct plantar flexion of the toes is the rule, but sometimes it is necessary to divert the attention of the patient to obviate voluntary movements. Whereas in persons with the symptom complex of spastic hemiparesis, this manipulation causes a reflex movement of the muscles that is extended to the great toe and adducts or abducts the foot.

Oppenheim has observed this phenomenon quite clearly in many cases of spastic paresis in which Babinski's toe phenomenon was indistinct or doubtful; and while he would spend several hours in his endeavor to convince the American students that the Oppenheim sign was more valuable than the Babinski sign, I do not believe that he was ever successful in his attempt, although it is fair to say that cases are observed occasionally in which the Oppenheim sign is present and the Babinski sign cannot be obtained. The two signs, however, when positive, indicate the presence of an organic lesion involving the pyramidal tracts.

HORNER'S SYNDROME

An interesting neurologic sign was described by J. F. Horner[26] in 1869. He reports a case in a woman, aged 40, in whom he observed first a drooping of the right eyelid, a narrowing of the pupil which responded to light, and a sunken bulb. There developed under

21. Progrès med. **11**: 311 (April 21) 1883.
22. Brochin: Gaz. d. hôp. **56**: 273 (March 24) 1883; Arch. gén. de méd. **3**: 385, 1864.
23. Forst, J. J.: Thèse de Paris, Con. a l'étude clinique de la sciatica, Paris, 1881, number 33.
24. Berlin. klin. Wchnschr. **58**: 669 (July 14) 1919.
25. Oppenheim, Hermann: Monatschr. f. Psychiat. u. Neurol. **12**: 421 (Nov.) 1902.
26. Horner, J. F.: Ueber eine Form von Ptosis, Klin. Monatsbl. f. Augenh. **7**: 193-198, 1869.

one's eyes, according to the author, increased redness and heat just to the median line, while the left side was pale and cool. On the right side there was no sweating. The temperature on the right side of the face was 35 C. (95 F.) and on the left, 30 C. (86 F.). The temperature behind the ears was, on two observations, as follows: right side, 34 C. (93.2 F.) and 35 C. (95 F.); on the left side, 30 C. (86 F.) and 32 C. (89.6 F.). The vasomotor reaction, therefore, included more than the region supplied by the trigeminus. It was his opinion that the syndrome was due to an involvement of the sympathetic fibers arising in the neck. Since his description a great deal has been written about this sign, which is most frequently caused by some involvement of the sympathetic fibers springing from the lower cervical cord. This tripod of symptoms, namely a narrowing of the palpebral fissure, a narrowing of the pupil and endophthalmos observed in one eye is a localizing sign which may be caused by many things—for instance, by a syringomyelia involving the cervical region of the cord, by tumors of the cord, by trauma affecting the lower portion of the brachial plexus and in cervical rib. Because of the many etiologic factors producing this syndrome, I call attention to it.

Many other important signs could be similarly described in such a presentation as this, but, as I have already stated, my object in this address is to add, if possible, some historical interest to these commoner and more important neurologic signs with the hope that the general practitioner may review them in a more retentive manner and so apply them in his examinations as to render them of value in the recognition of organic changes in the central nervous system.

8 South Michigan Avenue.

EIGHT YEARS' EXPERIENCE WITH THE KETOGENIC DIET IN THE TREATMENT OF EPILEPSY*

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As the use of the ketogenic diet in the treatment of epilepsy was started at the Mayo Clinic, it seems well to report at this time on the original series of cases of children who have been observed during the last eight years. Since the introduction of the diet as outlined by Wilder[1] in 1921, the results of the treatment of idiopathic epilepsy in children have maintained the same proportion of cure and improvement to failure. Until April 1, 1930, we had prescribed the ketogenic diet for 272 children. Included in this number were twenty-nine cases of symptomatic epilepsy, and although two of the patients continue to be free from attacks, the results are not figured in the results in cases in which the patients have been observed for more than a year.

In 1927, our cases were classified[2] so as to show every possible variation in type and in result of treatment. In this report the results are classified into those of: (1) freedom from attacks, (2) definite benefit and (3) failure, that is, if for any reason benefit was not derived from the diet. Because of the nature of material under consideration, we must exclude data concerning patients who did not follow the diet consistently for at least two months. Seventy-two such patients could not be kept in ketosis because of lack of cooperation on the part of the patient or parents. There are, therefore, 171 patients that form the basis of the results reported here.

If patients on the diet remain free from attacks for periods of from nine months to a year, it is exceptional for the attacks to return when the children gradually resume a diet which, although not ketogenic, is low in carbohydrate and high in fat. We have found that if attacks return when the patient is placed on such a diet, an increase in fat and diminution of carbohydrate sufficient to produce ketosis will again free the patients from attacks. However, this rule, too, has exceptions. One of our patients was free from attacks of petit mal from October, 1924, to October, 1928. Two and a half years of this time she was on general diet, but in October, 1928, she had an attack of petit mal. She was at once put back on a ketogenic diet and was free from attacks until January, 1929, at which time she returned to a general diet. A questionable attack occurred in July, 1929. She was again put on a restricted diet, in spite of which she had occasional attacks. A recent letter stated that she is not entirely free from attacks. Although this patient was free from attacks for a period of four years, two and a half of which she was on general diet and gave every indication of remaining permanently free from attacks, she has had what we must consider a definite relapse and, therefore, has been taken from our former group of cured patients.

Another patient, who was placed on the diet in 1924, was free from attacks for two years and then had a few attacks so that she was put back on the ketogenic diet at once. She remained on the diet only a few months, then resumed a general diet, and has only had two attacks since that time, about two years. This patient has also been placed in the improved group in our present report.

For purposes of classification in this paper, we have considered as cured all patients who have been freed from attacks by the dietary treatment for at least a year.

The only complication in the entire series of cases was a case of pellagra which may possibly have been produced by the diet. The introduction of a small amount of yeast into the diet was sufficient to cure the pellagra.

ANALYSIS OF CASES

Until April 1, 1930, we had treated 243 children with idiopathic epilepsy by the ketogenic diet. From this group we excluded the 72 patients who failed to cooperate. This leaves 171 children from whom to determine results; 141 of these have been on the diet more than a year, and thirty have been treated less than a year.

Of the group of 141 patients treated for more than a year, 43 patients have remained free from attacks from one to seven years. Thirty-two patients have shown definite improvement, as evidenced by a decided reduction in the number and severity of the attacks and by improvement in general demeanor. Of course, in the last analysis the results in this group must be considered as failures, but the improvement has been such that the parents feel that more has been accomplished by the diet than by any other regimen. The

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* From the Section on Pediatrics, the Mayo Clinic.
* Read before the Section on Diseases of Children at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

1. Wilder, R. M.: The Effect of Ketonemia on the Course of Epilepsy, Bull. Mayo Clinic **2**: 307 (July 27) 1921.
2. Helmholz, H. F.: The Treatment of Epilepsy in Childhood: Five Years' Experience with the Ketogenic Diet, J. A. M. A. **88**: 2028-2032 (June 25) 1927.

results of the treatment of 66 patients must be considered as failures.

In the group of 30 patients who have been under observation for less than a year, 11 have been entirely free from attacks, 13 seem definitely improved, and 6 have not responded favorably to the diet. Before the diet was tried, most of our patients had been on a regimen in which phenobarbital was commonly used in controlling the convulsions. It is our experience that in a certain percentage of cases the addition of phenobarbital will prevent the attacks when neither the diet alone nor the phenobarbital alone will control them.

TABLE 1.—*Comparison of Results*

Status in 1927		Status in 1930			
		Cured	Improved	No Benefit	No Cooperation
Free more than a year...	18	16	2	..	..
Free less than a year....	8	5	2	..	1
Attacks on resuming normal diet	3	1	1	..	1
Improved	20	1	4	9	6

COMPARISON WITH PREVIOUS REPORT

It is of particular interest to study the changes that may have taken place since our report three years ago, because it is the continued absence of attacks in the group of so-called cured patients that is the most significant criterion of the efficacy of the treatment.

In the group of 43 cured patients there are 16 from the original group of 18 patients who had been free from attacks for more than a year. The other 2 patients, whose history has been given here in detail, have been taken from the group of those cured and placed in the group of those who are improved. In our previous classification there were 8 patients who had been free from attacks for less than a year and it might have been expected that these 8 would be found in the group who are now cured. Five of them are in this group, 2 are in the group of those who are improved, and 1 patient failed so completely to cooperate that it was impossible to continue with the diet even after the beginning had been so successful.

In 1927 we had three patients who had had attacks on resumption of a normal diet. One of these patients is considered to be improved, one continues free from symptoms as long as she is in ketosis but the parents cannot keep her from eating sweets for any length of time, and the third patient has been on a general diet for three years and has been free from attacks so that we have included her as being cured.

In the previous classification the improved patients, twenty in number, were subdivided into those in constant ketosis and those whose attacks were apparently due to breaks in ketosis. It is rather startling to discover that only one patient has been advanced to the group of those cured and that only four patients have remained in the group of those who are improved.

Nine patients failed absolutely to be benefited and six did not cooperate. These six with proper control might have remained in the group of those who are improved. Table 1 shows less fluctuation in results in the group of those who are cured.

DEHYDRATION

It has been our impression that, although dehydration may be a factor in the control of convulsions, it is not the only factor. It has been definitely shown that dehydration has little, if any, effect on the seizures of petit mal in epilepsy. The diet, on the other hand, has a definite effect on attacks of petit mal. Some of our most striking results have been in this type of case.

One of our recent patients who had been having from twelve to fifteen attacks in twenty-four hours was entirely free from attacks after being placed on the diet, and during the two weeks' period of observation she drank daily about nine glasses of water.

In a publication by McQuarrie and Keith,[3] report is made of a patient who responded extremely well to the ketogenic diet. In addition to her diet she was given 1,000 cc. of water each day without any effect on the convulsive seizures. It has been our experience that patients whose convulsions were not controlled by the ketogenic diet were not rendered free from attacks by restriction of water. Several patients from whom we withdrew water to the point of hyperthermia were not freed from attacks. One patient was later placed on the ketogenic diet and has been entirely free from attacks for a number of months.

In a study of experimental convulsions in rabbits, produced by intravenous injection of thujone, as suggested by Cobb,[4] with the modification that the thujone was emulsified to a concentration of 1 per cent in 6 per cent acacia, one of us[5] has recently been able to confirm the observations of Elsberg and Pike[6] that dehydration decreases the susceptibility of the animal to experimental convulsions. The dehydration was produced by the injection of 50 per cent sucrose solution and was rather marked. On the other hand, animals on a regimen in which considerable weight was lost reacted to the convulsing dose of thujone exactly as did the normal animals.

The effect of the intravenous injection of various drugs on the production of thujone convulsions was also studied in rabbits. After the intravenous injection of acetone the animals did not respond to the normal convulsing dose. Ethyl aceto-acetate was found to have a similar effect, although it was definitely more toxic than acetone. A third acetone body, diacetone alcohol, was also used. The toxic action of this drug was studied in rats by Walton, Kehr and Loevenhart,[7] in 1928. It is somewhat more toxic than acetone and its soporific action develops more rapidly. Susceptibility to the thujone convulsions was considerably reduced, its action in this respect being more marked than that of either acetone or aceto-acetate. The effect of these drugs was definitely not dehydrating, at least

TABLE 2.—*Summary of Results*

Patients given ketogenic diet		272
Patients with symptomatic epilepsy		29
Patients with idiopathic epilepsy		243
Patients who failed to cooperate		72
Patients treated less than a year		30
Free from attacks	11	
Improved	13	
Not benefited	6	
Patients treated more than a year		141
Free from attacks	43	
Improved	32	
Not benefited	66	

3. McQuarrie, Irvine; and Keith, H. M.: Experimental Study of the Acid-Base Equilibrium in Children with Idiopathic Epilepsy, Am. J. Dis. Child. **37**: 261-277 (Feb.) 1929.

4. Cobb, Stanley: A Case of Epilepsy with a General Discussion of the Pathology, M. Clin. North America **5**: 1403-1422 (March) 1922.

5. Keith, H. M.: Unpublished data.

6. Elsberg, C. A., and Pike, F. H.: Studies on Epilepsy: III. The Influence of a General Increase or Diminution of Intracranial Pressure upon Susceptibility of Animals to Convulsive Seizures, Am. J. Physiol. **76**: 593-597 (May) 1926.

7. Walton, D. C.; Kehr, E. F., and Loevenhart, A. S.: A Comparison of the Pharmacological Action of Diacetone Alcohol and Acetone, J. Pharmacol. & Exper. Therap. **33**: 175-183 (June) 1928.

on the brain tissue, as on drying this was found to contain the same amount of water as the brain of the normal rabbit.

SUMMARY

During the last eight years, 272 patients have been placed on the ketogenic diet. Among these were 29 patients with symptomatic epilepsy and 72 patients whose cooperation was such that the effect of the diet could not be accurately determined. Of the remaining 171, 30 have been treated for less than a year. This leaves 141, of whom 43 are cured, 32 are improved, and 66 have failed definitely to improve (table 2). The present percentage of benefits and failures is similar to that of our previous report; 30 per cent of the patients are free from their convulsive seizures and 70 per cent are not free. Of the recent patients, 37 per cent are free from attacks and 63 per cent still continue to have seizures. The type of our material is such and the period of contact, except by mail, is so short that it seems likely that physicians who are in constant contact with their patients should get better results than these.

ABSTRACT OF DISCUSSION

DR. BRONSON CROTHERS, Boston: The distinction between symptomatic epilepsy and idiopathic epilepsy ought to be made quite clear. There are methods of investigation now that reveal organic destruction of brain tissue in a considerable number of cases, and many of those cases are helped, I should think, by the same measures that help so-called idiopathic epilepsy. It is quite obvious, of course, that cases of convulsions with tumor or active infection are of a different category. I wish Dr. Helmholz would say whether in the absence of active pressure or infection there is any particular contraindication for this diet. Another point that is simply interesting is that all pediatricians treat convulsions. How is it possible to treat convulsions without taking into account the enormous psychologic and psychiatric implications of the whole situation? The careful management of routine recurrent attacks should be obligatory on every physician. Drug treatment may fail; diet may fail; in fact, from all statistics, probably will fail. Yet in all those cases medical management has not by any means been exhausted when drugs and diet fail to give relief. On the other hand, epilepsy is a common and disabling disease, so that all physicians must follow with as much attention as possible what Dr. Helmholz is doing in Minnesota, what Dr. McQuarrie is doing in New York, and see whether they can get the same results.

DR. WILLIAM P. LUCAS, San Francisco: The authors have had a unique opportunity of studying a large series of cases over a number of years, thus being able to present end-results and to emphasize the great importance of the psychologic factors in the family background of any epileptic child. As they have pointed out, the home, not the hospital, really determines the ultimate success of treatment. Cooperation and intelligent appreciation of the problem by the family are essential and this demands of the physician the patient education of the family group in the chances or hazards of long and careful treatment. I think many failures are due to the fact that the parent think the cure will be rapid and are therefore discouraged by the return of old symptoms during the long process of treatment. The authors have emphasized the fact that the ketogenic diet gives better results in cases of petit mal than does the combination of ketogenic diet and dehydration. I have found that by adding phenobarbital to the ketogenic diet better results may be obtained than by either treatment used alone. The combination of the two has lengthened the time between attacks and has lessened their severity. In a case in which allergic conditions played a definite part in the grand mal attacks a boy had definitely improved on a ketogenic diet with dehydration and yet the attacks returned in spite of the fact that the family was most intelligent in cooperation. During this period of improvement the boy developed hives, which suggested an allergic condition, and he was found sensitive to some of the foods allowed in the ketogenic diet. Since the removal of these he has enjoyed the longest period free from attacks, now six months. His mental attitude has shown corresponding improvement. There are other factors to be carefully considered. The question of infection during the treatment may vitally affect the improvement. Fatigue may easily bring on attacks in spite of the strict diet and the best of regimens.

DR. HENRY F. HELMHOLZ, Rochester, Minn.: With regard to the cases of symptomatic epilepsy, early in our experience we had a number of cures that led us to believe that there would be little difference in the results of the treatment of the two types of epilepsy. However, we found that in a group of twenty-nine only two were permanently freed from their attacks. We do not take any of our patients into the hospital. We find it is more important for the patient to remain with the mother or caretaker. The child has his meals at the diet kitchen where the mother or nurse receives her instructions. If it is possible for the mother to do so, we ask her to take a small kitchenette-apartment where for a period of a week she can prepare the food so that she will go home confident that she has mastered the technic. With the freedom from attacks we see marked improvement in the behavior of children. An almost incorrigible boy will change within two or three weeks so that the parents will say it is surprising that not only has he had no further attacks but his demeanor has changed completely. One other thing I wish to emphasize is that when children are placed on the diet and ketosis becomes evident, they complain for three or four days of being rather sleepy. There seems to be a definite effect of the ketone bodies.

DIETARY FACTS, FADS AND FANCIES*

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The American dietary has been frequently criticized by students of nutrition as being too low in vitamins and bulk, too high in carbohydrates and concentrates, and deficient in its ratio of alkaline ash-forming foods. It has been generally believed by the laity that successful treatment of many diseases depended on diet. Many physicians, while aware of possible dietary deficiencies, do not believe that the causes, except indirect ones, of many diseases are to be found in faulty diets. They believe that other factors are also of great importance, such as hereditary predisposition to disease, infections and their sequelae, and the tissue changes that inevitably result from wear and tear and lapse of time.

In the prevention of conditions characterized by degenerative changes affecting the heart, arteries and kidneys, prior to the stage of chronic disability, much may be accomplished by proper diet. The changes apparently most necessary in our national dietary involve, for maintenance of health after maturity with moderate activity, lessened consumption of meats and fats, moderate consumption only of sugars, and increased consumption of fruits and vegetables. Langstroth [1] believed that improvement in the nutrition of many patients with chronic metabolic diseases followed a diet high in so-called protective foods consisting of the leafy vegetables and milk.

That a change in diet may be followed by cure, as many believe, in conditions already characterized by progressive tissue changes affecting the arteries, heart or kidneys is remote. In general, the kind of advice most needed for adult patients refers more to the quantity of food taken than to particular constituents so often maligned.

* Read before the Section on Practice of Medicine at the Eighty-First Annual Session of the American Medical Association, Detroit, June 27, 1930.

1. Langstroth, Lovell: Relation of American Dietary to Degenerative Disease, J. A. M. A. **93**: 1607 (Nov. 23) 1929.

THE PROTEINS

From a biologic standpoint investigators have concluded that, in health, the average man of moderate activity requires a daily intake of food approximating from 2,500 to 3,000 calories. The intake of protein should be about 100 Gm. For women of moderate activity, in health, 80 Gm. of protein and 2,500 calories should be adequate. No definite data are available to prove that the incidence of degenerative diseases is less among vegetarians than among the larger part of the population who partake of meat proteins. The vegetable proteins possess less physiologic value. In that period of life after the fourth decade when less energy is usually required, an intake of less than 100 Gm. of protein daily is probably advisable. It was proved by Chittenden that the amount of protein may be reduced to half or less than half of what the appetite suggests, during many months, with continued health and strength. The appetite is, however, not a safe guide in selection of food.

It is questionable whether a reduction in protein to an amount greater than necessary to maintain normal nitrogen balance in the body is advisable for prolonged periods. This statement applies with equal force in conditions of health or of disease. In starvation a man will lose one two-hundredths of his body protein daily. Twenty per cent of body weight consists of protein. The amount of protein lost in starvation, for a man weighing 70 Kg., will therefore consist of 70 Gm. daily. Meltzer, years ago, pointed out that the daily consumption of protein in excess of minimal requirement of 1 Gm. per kilogram of body weight was one of the great factors of safety in human life. This is particularly true for children. Those who believe in vegetarianism probably secure an adequate amount of protein from milk, eggs and cheese despite their restriction of meat.

In recent years, the attempt has been made to prove that excessive consumption of protein may be responsible for degenerative renal and vascular lesions. The array of work done is impressive but not convincing. It has appeared from the work of Newburgh and his co-workers,[2] of Polvogt, McCollum and Simmonds,[3] of Sansum, Blatherwick and Smith,[4] of Evans and Risley,[5] and of Nuzum, Osborne and Sansum,[6] that diets containing excess protein have produced degenerative renal lesions in experimental animals. On the other hand, the work of Drummond, Crowden and Hill,[7] of Osborne, Mendel, Park and Darrow,[8] of Reader and Drummond,[9] of Miller,[10] of Jackson and Riggs [11] and of Addis and his co-workers,[12] has shown that no structural defects were produced in experimental animals by such diets. The subject is still open to speculation. In some of the experiments, from which rather broad conclusions were drawn, no measurements of food intake were mentioned. If it is eventually proved that excess protein actually consumed is harmful to animals, it will still remain to be proved that the protein ingredients of the diet were alone responsible for the degenerative lesions observed. It will likewise remain to be proved that protein is harmful to man in the proportions consumed in the average diet of approximately 100 Gm. daily. Defective diets of any type may experimentally produce renal and vascular lesions. Experiments with high protein diets in herbivorous animals of relatively short span of life may not bear any comparable relationship to human disease. In such matters the most valuable experiment may ultimately turn out to be that of human experience.

Newburgh and his co-workers [13] have recently described the effects of a daily diet containing 338 Gm. of beef muscle and liver for six months in a human experiment. The subject developed a significant albuminuria and a twentyfold increase in casts. His blood pressure readings were unchanged, a result that might have been expected because of the relatively short duration of the experiment; mention was not made of blood nitrogen retention. Recovery was complete as to the albuminuria and cylindruria in ten days after the high meat-protein diet was discontinued. Such an experiment is not convincing in the etiology of renal disease and it probably was not intended to be. Every physician has seen albuminuria and cylindruria develop during the course of acute infections, in which acid-ash or protein intoxication may play a part, but recovery has promptly taken place on the subsidence of fever with no subsequent evidence of injury to the kidneys. Nature has fortunately endowed the human body with a large reserve of kidney function. One may recall to advantage the classic experiments of Martin Fischer.

Estimated Average per Capita Consumption of Sugar in Four Important Countries *

Year	United States, Pounds	United Kingdom, Pounds	France, Pounds	Germany, Pounds
1871	36	44	17	12
1881	43	64	22	15
1891	61	78	26	21
1901	71	91	24	27
1911	83.9	92	39	42
1921	102.4	..	..	..
1925-1926	121	95	44	51

* U. S. Department of Agriculture, Bureau of Agricultural Economics. Figures for the United States and United Kingdom refer partly to raw and partly to refined sugar.

In the treatment of acute and subacute nephritis, physicians advise restriction of proteins if the blood nitrogen is above normal limits. In those types of disturbed kidney function, as in so-called nephrosis dependent on altered metabolism in which faulty utilization of proteins may play a part, restriction of proteins may not be advisable. For patients with arteriosclerosis, with or without hypertension, and associated chronic disturbances of kidney function, physicians usually advise restriction of protein when the urine contains albumin and casts. There appears to be no valid reason why restriction of proteins should be advised beyond the point necessary to maintain normal blood nitrogen. In any event, restriction should not exceed the minimum protein requirement of two-thirds Gm. per kilogram of body weight.

2. Newburgh, L. H.: The Production of Bright's Disease by Feeding High Protein Diets, Arch. Int. Med. **24**: 359 (Oct.) 1919. Newburgh, L. H.; Marsh, P. H.; Clarkson, Sarah; and Curtis, A. C.: The Dietetic Factor in the Etiology of Chronic Nephritis, J. A. M. A. **85**: 1703 (Nov. 28) 1925. Newburgh, L. H., and Curtis, A. C.: Production of Renal Injury in the White Rat by the Protein of the Diet, Arch. Int. Med. **42**: 801 (Dec.) 1928.

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4. Sansum, W. D.; Blatherwick, N. R., and Smith, Florence H.: The Use of Basic Diets in the Treatment of Nephritis, J. A. M. A. **81**: 883 (Sept. 15) 1923.

5. Evans N., and Risley, E. H.: California & West. Med. **23**: 437, 1925.

6. Nuzum, F. R.; Osborne, Margaret; and Sansum, W. D.: The Experimental Production of Hypertension, Arch. Int. Med. **35**: 492 (April) 1925.

7. Drummond, J. C.; Crowden, G. P., and Hill, E. L. G.: J. Physiol. **56**: 413, 1922.

8. Osborne, T. B.; Mendel, L. B.; Park, E. A., and Darrow, D.; Proc. Soc. Exper. Biol. & Med. **20**: 452, 1922-1923.

9. Reader, V. B., and Drummond, J. C.: J. Physiol. **59**: 472, 1924.

10. Miller, A. J.: J. Exper. Med. **42**: 897, 1925.

11. Jackson, Henry, Jr., and Riggs, Margaret D.: J. Biol. Chem. **67**: 101 (Jan.) 1926.

12. Addis, Thomas; MacKay, E. M., and MacKay, Lois L.: J. Biol. Chem. **71**: 139-157 (Dec.) 1926.

13. Newburgh, L. H.; Falcon-Lesses, M., and Johnston, M. W.: Am. J. M. Sc. **179**: 305 (March) 1930.

CARBOHYDRATES

There has been an enormous increase in the per capita consumption of sugar in the last hundred years. According to the U. S. Department of Agriculture, the annual consumption of sugar in the United States in 1821 was 7 pounds per capita, while in the United Kingdom it was 16 pounds per capita. The accompanying table shows the marked increase in four important countries.

Of all articles entering into the diet, the greatest increase, during the past fifty years, has occurred in the sugar constituents. This has resulted from cheaper production and, in part, to increased taste for confectionery, sweet beverages and pastries. The carbohydrates in the diet are the cheapest form of energy. The average diet of from 2,500 to 3,000 calories contains from 400 to 500 Gm. of carbohydrates. If an average of 400 Gm. is actually consumed 350 days of each year, the total consumption will amount to about 300 pounds a year. If sugar approximates more than one third of this amount, as the figures seem to indicate, it is evident that the sugar consumption is too high. Cultivation of taste for sweets in children to the exclusion of other foods also cultivates malnutrition with faulty bone growth and carious teeth. Among adults, one penalty is obesity.

It has been interesting to speculate on the increasing incidence of obesity during the past fifty years, on the increase of diabetes mellitus and on the increase of duodenal and gastric ulcer. It has also been interesting to note that the literature of gastric and duodenal ulcer has been largely increased in the two English speaking countries whose consumption of sugar leads the world. It has appeared plausible, since the stomach has no provision for the digestion of carbohydrates, that, with a mixed meal containing an excess of sugar, bacterial decomposition of sugars may occur during the process of protein digestion in the stomach, especially if the time of emptying is delayed. The decomposition products are believed to be fermentative, organic, diffusible acids such as lactic, acetic, butyric, propionic and valeric acids. These products, because of their irritating character, may promote supersecretion of hydrochloric acid. The intolerance of peptic ulcer patients for sugar is well known. The subject has secured but passing interest as a factor in the etiology of peptic ulcer. Deeks [14] had written on the subject in 1912, while I [15] reported similar observations in 1916 before this section.

Another serious criticism of increased sugar consumption refers to displacement of other foods containing the necessary inorganic salts, vitamins and bulk. The excessive use of sugar overtaxes the pancreas and increases the storage of fat. Restriction of carbohydrates has been followed by improvement in some types of arthritis. Many dermatologists are convinced that sugar intolerance is a factor of importance in the causation of eczema. The cereals, including wheat, constitute about 50 per cent of the total calories in the American diet.

THE FATS

The fats are necessary for growth and development to the age of maturity largely as sources of energy and because of the vitamins they contain. The average diet of about 2,500 calories should contain about 80 Gm. of fat. About one fifth of the American people are burdened with overweight.[16] So-called simple or dietetic obesity refers to the condition of those persons with normal metabolic rates who overeat and underexercise. Life insurance statistics [17] have shown that, after the age of 30, the most favorable mortality rates were found among those whose weights were below the established normal.

The records of the Metropolitan Life Insurance Company [18] show that for men below 67 inches (170 cm.) in height, for the age period 40-44 years, an excess weight of 20 per cent above normal resulted in an increased mortality of 30 per cent; while an excess of 40 per cent in weight resulted in an increased mortality of 80 per cent. For men over 70 inches (178 cm.) in height, for the age period 40-44 years, excess weight of 20 per cent above normal resulted in a 40 per cent increase in mortality rate; while for those whose weight was 40 per cent above normal the mortality rate was increased 80 per cent. The lowest mortality for the age periods 50-62, according to the investigation of the Medico-Actuarial Committee, occurred among those who were from 15 to 20 per cent below average weight.

The tendency to overeat and to gain in weight begins early. The person who is overweight at 35 will in all probability be much overweight at 50. The increased mortality among the obese is especially evident in degenerative diseases affecting the heart, blood vessels and kidneys. The study of Dublin [19] showed an increased incidence of cancer among the obese. The highest mortality rate from cancer was found in the group 25 per cent or more overweight.

Emphasis should be placed by physicians on the prevention of obesity. They should note the tendency to overweight among patients in their third decade and should advise them to restrict their intake of sugars and more rigidly to restrict the fats in order to lessen the dangers of later years. Such patients should think less of their palates and more of their health. The principles of dietetic reduction are understood by physicians, but the necessity for reduction is often not so well appreciated. A condition of marked underweight predisposes, especially in children and young adults, to tuberculosis. Reduction of weight by dietary fads through desire for a slender figure without regard for energy or health involves risk.

Gallbladder disease has appeared to be more common among the obese than among the thin. Physicians generally have advised restriction of meat fats, butter and cream, gravies, mayonnaise and rich pastries in gallbladder dyspepsia. In addition, such patients should avoid large meals, raw fruits and raw vegetables and condiments. Dowling [20] believes that gallbladder disease is the commonest cause of dyspepsia.

SPECIAL DIETARY CONSIDERATIONS

The Acid-Ash Food Elements.—The ordinary diet consisting of meats, eggs and cereals, including bread, produces an acid ash. If the diet contains in addition a moderate amount of milk, potato, vegetables and fruits, the acid elements are neutralized. The term acidosis has become a popular fancy. Clinically, the acidosis of starvation and states of dehydration, of diabetes and of some types of nephritis is well known. The belief that acid-ash foods are responsible for a variety of common symptoms such as gastric hyperacidity, lassitude, bilious-

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15. Stone, W. J.: Carbohydrate Restriction in the Medical Treatment of Gastric Hyperacidity and Ulcer, J. A. M. A. **67**: 994 (Sept. 30) 1916.
16. Fellows, H. H.: Overweight and Underweight, Metropolitan Life Insurance Company Publications.
17. Report of the Joint Committee on the Medico-Actuarial Mortality Investigation, comprising data supplied by forty-two life insurance companies of the United States and Canada for the period 1885-1908, inclusive, based on 744,672 cases.
18. Statistical Bull. Metropolitan Life Insurance Company **3**: 3, 1922.
19. Dublin, L. I.: Proc. Assn. Life Insur. M. Dir. **15**, 1929.
20. Dowling, G. A.: Dyspepsia Due to Gallbladder Disease, J. A. M. A. **92**: 7 (Jan. 5) 1929.

ness, acid mouth, headaches, nephritis and high blood pressure carries one far afield. These symptoms, and others of similar character, are as frequently encountered among patients whose urines are neutral or alkaline. Among those who drink little water, concentration of the urine with relative increase of acidity is common. The amount of fluid intake merits investigation in such conditions. The belief of Sansum [21] that "too much hydrochloric acid may lead to blood vessel disease associated with high blood pressure" lacks confirmatory evidence.

There is no evidence that the kidneys eliminate nitrogen waste any more efficiently when the urinary secretion is alkaline than when it is acid. Excessive acids or excessive alkalis have produced nephritis in experimental animals. The importance of the acid-ash diet as a factor in the etiology of disease has been overemphasized. Marriott [22] believes that "acidosis is a rare condition and there is no good evidence that the regular taking of large amounts of alkaline-ash foods is of any especial benefit." There is no evidence, at least in my experience, that an alkaline-ash dietary can effect the reduction of established arterial hypertension. This lack of evidence should not, however, be an argument against the more general use of fruits, milk and vegetables since essential vitamins and bulk are thus supplied, fecal elimination is facilitated and the digestive load is lessened. The benefits ascribed to basic-alkali diets may be attributed in many cases, with equal logic, to other factors, such as rest and the medication employed.

THE PURINE CONSTITUENTS IN FOODS

The nucleoproteins of food are broken up in the body to the purine bases from which uric acid is formed. A certain amount is formed from the breaking down of body protein. Gout is a metabolic disease characterized by the deposition of uric acid as monosodium urate in the tissues. In this country, acute gout is relatively uncommon. Many persons, however, show urate deposits which have gradually accumulated about the finger and toe joints without evidence of acute attacks. In this class are many patients who show disturbed metabolism from arteriosclerosis and kidney dysfunction with joint and muscle stiffness, neuralgias and chronic headaches not due to foci of infection. Their diets may contain an excess of purines. A low protein-low purine diet may be beneficial. In Germany, during the World War, gout was rarely seen, because of the general restriction of meats. In certain skin diseases such as eczema and pruritus, both local and general, Schamberg and Brown [23] have found the blood uric acid increased.

The following foods should be restricted for patients with gout: meats, including liver, kidney, sweetbreads and brains; fowl and fish, including anchovies, sardines, oysters, crab and lobster; meat broths; coffee; tea, and chocolate. Most vegetables contain but little purine with the exception of mushrooms, shell beans, peas, lentils, asparagus, cauliflower and spinach. If it is desirable to place a patient on a purine-free diet, such vegetables should be restricted. Dairy and cream cheese contain moderate amounts of purine. The most suitable diet in gout consists of the following purine-free foods: milk and buttermilk; eggs; cream or vegetable soups; bacon; cereals, including tapioca; macaroni and spaghetti; white and corn bread; butter and sugar; jam and marmalade; potatoes, carrots, celery, onions, cabbage, lettuce, cucumber, radishes, string beans, olives; Swiss, Edam, Limburger and Roquefort cheeses; ice cream; all fruits and nuts.

Mention may be made of the deleterious effect of high purine substances such as liver extract, so commonly used in the treatment of anemias, on the downward progress of leukemia and probably also of tumor growths. Liver extract encourages the growth of red cells and leukocytes. In malignant conditions, because of blood concentration, the red cell count may approach normal but the hemoglobin is usually low. The use of liver extract in cancer appears contraindicated.

THE VITAMINS AND SALTS

Vitamin A.—The growth, antiophthalmic and anti-infective vitamin, A, is essential for health at all ages. Its richest source of supply is in milk and butter, egg yolk, cod liver oil, liver, tomato, carrots, and the leafy vegetables. The body fortunately has the capacity to store vitamin A in abundance.

Vitamin B.—The vitamin B complex, which also is concerned with growth, consists of two fractions; one, known as the antineuritic element, is probably concerned with the prevention of beriberi in man, while the other has become known as the antipellagric element, since its deficiency may be responsible for pellagra in man. The body has limited capacity for storage of vitamin B and symptoms of deficiency may develop rapidly. This vitamin complex has been shown to be necessary for the maintenance of appetite and proper weight in adults and is especially necessary for lactating women. Although few foods have been adequately tested for vitamin B, it is known that cereal grains and yeast contain the antineuritic element, while cow's milk, leafy vegetables and bananas contain the antipellagric element. Disturbances of the digestive tract resulting from vitamin B deficiency are probably of considerable clinical importance, especially noninfective types of colitis and malnutrition.

Vitamin C.—This vitamin, which prevents scurvy, also appears necessary for normal growth and for the prevention of tooth decay. It is particularly abundant in the citrus fruits, apples and berries, raw cabbage, lettuce, peas, tomatoes whether raw, cooked or canned, and watercress. The body is limited in capacity to store vitamin C, so that the diet for all ages, but especially during childhood, should contain it in abundance.

Vitamin D.—This vitamin has been shown necessary for normal assimilation of calcium and phosphorus, a deficiency of which is manifested by rickets. The essential substance promoting assimilation of calcium and phosphorus necessary to bone development is a definite chemical compound known as ergosterol. This substance, on exposure to ultraviolet rays, develops powerful antirachitic properties. Its importance in the prevention of dental caries has been emphasized. Liver, cod liver oil and egg yolk contain vitamin D in abundance. Boyd, Drain and Nelson [24] have recently reported arrest of dental caries through diets rich in mineral and vitamin contents such as cod liver oil, orange and tomato juice, milk, vegetables and fruits. They exempt saliva and bacterial decomposition as causes of mouth acidity and believe that, even in unclean

21. Sansum, W. D.: The Normal Diet, St. Louis, C. V. Mosby Company, 1927.
22. Marriott, W. M.: The Uses of Proprietary and Medicinal Foods in the Hospital, J. A. M. A. **94**: 1281 (April 26) 1930.
23. Schamberg, J. F., and Brown, H.: The Relationship of Uric Acid in the Blood to Eczema and Allied Dermatoses, Arch. Int. Med. **32**: 203 (Aug.) 1923.
24. Boyd, J. D., and Drain, C. L.: The Arrest of Dental Caries in Childhood, J. A. M. A. **90**: 1867 (June 9) 1928. Boyd, J. D.; Drain, C. L., and Nelson, Martha V.: Dietary Control of Dental Caries, Am. J. Dis. Child. **38**: 721 (Oct.) 1929.

mouths, arrest of dental caries can be accomplished by proper diet.

Vitamin E.—The reproductive and antisterility vitamin, E, has been found essential to normal gestation in animals. It is present in lettuce, cereals, fresh meat and egg yolk. As shown by McCollum, it assists in assimilation of iron, a factor of possible importance in the prevention and treatment of certain types of anemia.

Iron.—The daily food of adults should contain about 15 mg. ($^{23}/_{100}$ grain) of iron. This may be obtained from foods according to analyses of their ash content,[25] in the following order: lima beans, peas, unmilled wheat, lean beef steak, spinach, oatmeal, raisins, eggs and green vegetables. The ordinary diet is not deficient in iron.

Copper.—The importance of copper in the diet has been realized from the work of Hart, Elvehjem and their co-workers at the University of Wisconsin. Deficiency of this element interferes with the assimilation of iron. It is apparently an important factor in the etiology of certain infantile and adult anemias. The analyses of foods made by Gerithault in 1927, quoted by McCollum and Simmonds,[26] show that the following ten foods contain the most copper. The figures given are milligrams of copper per kilogram of fresh food: wheat germ, 48.0; almonds, 13.0; oats, 17.1; kidney beans, 10.0; rye, 7.5; peas, 7.2; asparagus, 7.0; maize, 6.8; lentils, 6.6; barley, 6.5

Calcium.—The American dietary is probably more deficient in calcium than in other ingredients. This element is essential for building bone and necessary for normal heart action and blood coagulation. The requirement is greater in childhood and approximates from 0.75 to 1 Gm. (11 to 15 grains) daily, the latter being the amount contained in one quart of milk. The minimum amount needed to maintain equilibrium is unknown. Calcium is especially needed during pregnancy and lactation. It is best obtained from milk, cheese, carrots, cabbage, turnips, oranges, prunes, beets and apples.

Phosphorus.—The amount of phosphorus required by adults has been estimated by Sherman and by Lusk to approximate from 1 to 1.5 Gm. (15 to 22½ grains) a day. It is essential to the nuclear structure of living cells and an important constituent of blood and lymph plasms. Judging from Sherman's analyses, the dietary is often deficient in phosphorus despite its wide distribution as an inorganic element in foods. Milk, egg yolk, cheese, unmilled wheat, beans, oatmeal, lean beef, peanuts, walnuts, almonds and many other fruits and vegetables contain it in abundance.

Magnesium, Sodium and Potassium.—These elements are usually not lacking in ordinary diets. For years physicians have believed, following the work of Ambard in France and Allen in this country, that chloride retention was an important factor in the etiology of arterial hypertension. The experience of O'Hare and Walker,[27] and more recently of Berger and Fineberg,[28] coincides with that of many clinicians that salt restriction is not followed by lower blood pressures. Restriction of salt is generally advised by physicians in the treatment of nephritis with edema. The work of Martin Fischer[29] indicated, however, that the swelling of tissue colloids in edema was counteracted by adding salt and alkali to the intake of fluid.

Iodine.—In certain endemic colloid goiter areas the water and vegetables raised from the soil are deficient in iodine. The normal thyroid stores about 25 mg. of iodine. Marine believes that the yearly requirement probably does not exceed 50 mg. In iodine deficiency, the administration of iodine in the form of iodized salt, or a few drops of compound solution of iodine, for a week or two twice each year is adequate.

Briggs[30] concluded from analyses of the blood of fifty patients with a variety of diseases that, except in nephritis, values for sodium, potassium, calcium, magnesium, chlorine and phosphorus were within normal limits. It has been shown that vitamins A, B, C and D are important for normal growth and health at all ages.[31] They are especially important for children. Their importance in the field of nutrition begins with pregnancy and lactation. It is impossible to estimate the importance of the vitamins in the future evolution of the race. If a race of supermen is ever to be obtained, the production of it may follow development of knowledge secured from further study of the vitamins and their influence on growth.

Patients under rigid dietary restrictions may develop symptoms of deficiency disease, such as bleeding gums, dental caries and purpura. Davidson[32] has reported three such instances in patients under treatment for peptic ulcer. Such manifestations cleared up rapidly after fruit juices and vegetable purées were added to the diet. The Imperial Cancer Research Council has been unable from clinical, experimental or statistical sources to show any relation between cancer and dietary deficiencies.

The palatability and digestibility of foods are important dietary considerations. The trained dietitian has done much to increase the comfort of hospital patients in this respect. A few well balanced standard diets of simple, well prepared food are more adequate and digestible for the sick than are the fancy servings so often demanded. The dietitian's interest in vitamins should not restrict her interest in the palatability and digestibility of foods.

FOOD FADS AND FANCIES

Without aid given to publicity by many newspapers, it is doubtful whether food cultists could long succeed in their propaganda of misinformation. It is easy to understand publishers who are influenced by the monetary return from space paid for by cultists and quacks, and by the large correspondence received, largely from unthinking people, by the so-called health department of their papers. The stereotyped reply to adverse criticism is that their newspapers are run for the masses. Exponents of dietary misinformation usually designate themselves chiropractors, osteopaths or naturopaths. Diet faddists among the laity are usually those who, having found certain varieties of food which they believe useful for themselves today, advocate such foods for every one else regardless of conditions. Tomorrow they believe something else. Their own food fad explains everything to those who believe.

We have recently witnessed the reaction, on the part of a newspaper in a community noted for its quacks and food cultists, occasioned by a lecture given by the

25. Sherman, H. C.: Chemistry of Food and Nutrition, ed. 3, New York, Macmillan Company, 1927.
26. McCollum, E. V., and Simmonds, Nina: The Newer Knowledge of Nutrition, ed. 4, New York, Macmillan Company, 1929.
27. O'Hare, J. P., and Walker, W. G.: Observations on Salt in Vascular Hypertension, Arch. Int. Med. **32**: 283 (Aug.) 1923.
28. Berger, S. S., and Fineberg, M. H.: The Effect of Sodium Chloride on Hypertension, Arch. Int. Med. **44**: 531 (Oct.) 1929.
29. Fischer, M. H.: Oedema and Nephritis, ed. 3, New York, John Wiley & Sons, 1921.
30. Briggs, A. P.: J. Biol. Chem. **57**: 351 (Sept.) 1923.
31. Smith, Sybil L.: Vitamins in Food Materials, Circular 84, U. S. Dept. of Agriculture, November, 1929.
32. Davidson, P. B.: The Development of Deficiency Disease During Therapeutic Diets, J. A. M. A. **90**: 1014 (March 31) 1928.

editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, who stated in his talk on "Healing Fads and Quackery" that he voiced only his own personal convictions. The Los Angeles *Times*, which has for years published advertisements of quacks and food cultists, attempted to justify its unsavory medical position in an editorial entitled "Medical Intolerance." [33] This editorial emphasized the point that lay citizens have a very good opinion of cults "recognized as beneficial by large numbers of our best credited and most influential people." On the intelligence of these "influential people" he did not comment. The editorial mentioned, when referring to the medical profession, that "these regular practitioners enjoy the confidence to the same degree as the naturopaths, the hygienists, the diet experts and the believers in the simple form of healing-through-faith employed by Christ Himself." This odious commentary illustrates from the lay point of view the pathetic lack of understanding of the well trained physician's education. It is apparently as inopportune to differ with those who have peculiar health beliefs as it is unwise to question religious opinions.

The publisher of the Los Angeles *Times* has recently been elected president of the American Newspaper Publishers Association. He is known as a public spirited citizen and is one of the trustees of Stanford University. An interesting dual spectacle presents itself. As trustee he must be officially interested in the high standards of medical education maintained by the medical school of that university. As newspaper publisher he chooses to forget his university interests and fosters the propaganda of quacks. He knows that no university of standing in this or any other country teaches the doctrines of cultists, and yet he sanctions departments, as do other publishers, sponsored by cultists who disseminate dietary and other health misinformation because it pays. Matters pertaining to the ethics of conduct in such matters will probably never be settled as long as gullible human nature exists. The poor are rarely as gullible in matters of health as the so-called upper classes. It has always been hoped that the fallacies of yesterday would not be the fallacies of today. It requires an optimistic outlook to believe that tomorrow will not bring new fallacies clothed in alluring garb. The Council on Pharmacy and Chemistry has recently appointed a special committee on foods. Its work will be of great value in exposing the fads and fancies of advertising propaganda.

All scientists deplore the attitude of those who distort partial truths into misleading statements. The yeast fad is an outstanding example. Certain European teachers with dignified titles have loaned [sic] their names to glaring advertisements advocating the use of yeast for nearly every human ill. That yeast may be beneficial under certain conditions is well recognized. The advertisements emphasize the need for vitamins B and D in the dietary. Since these substances are found in abundance in commonly used foods, it seems superfluous to stress the vitamin content of yeast in curing everything from "that tired feeling" to a "nervous breakdown." Dr. Carl von Noorden, whose large photograph has recently adorned the pages of the *Literary Digest* advertising Fleischmann's yeast, is one of recent European teachers, among others, to fall for the lure of publicity and its illegitimate emoluments.

Food faddists always have something to sell. They often attempt to give authenticity to opinions based on ephemeral research. The information their books contain is not founded on proved facts obtainable from such volumes as Lusk on "The Science of Nutrition," McCollum and Simmonds on "The Newer Knowledge of Nutrition," Sherman on "The Chemistry of Foods and Nutrition," or McLester on "Nutrition and Diet." Reliable information usually has little selling appeal. What is necessary from an advertising standpoint is something new. The "dangerous food combination" or the "acid starch danger" theory may be exploited. Physicians are constantly astonished to find in otherwise intelligent patients a belief in such theories. There has never been the slightest proof that foods which are harmless when taken alone can become harmful when taken together in any combination. Then there are the vagaries of those who believe that harm may come from combinations of starchy foods, such as cereals with acid fruits, on the theory that acid prevents the starch-splitting action of saliva. There has never been the slightest proof that fruits such as orange or grapefruit eaten with milk or cereals is harmful. In the same category are those who dilate on the harm that comes from the mixture of protein and starchy foods despite the fact that a large part of our population has, for generations, been raised in a fairly successful way on meat and potatoes. In recent years we have witnessed the propaganda for whole wheat bread. Its advocates attribute many of the ills of mankind to milling the grain which removes the bran. They assert that white bread is thus deprived of important vitamin constituents, ignoring the fact that these elements are supplied when white bread is made with milk, or eaten with butter, and in other constituents of the diet. The necessity for roughage in the form of bran has likewise been greatly overstated. Bran is indigestible and irritating. As a constituent of the diet it is not necessary for the well or ideal for the sick. The cellulose of cooked vegetables has much more to commend it.

If the American Newspaper Publishers Association could be persuaded to adopt a constructive attitude in their newspapers toward authentic health information, the results for the public would in a decade surpass expectations. The newspapers have a great influence in this field and should feel an obligation, similar to that felt by physicians, in the prevention of disease through education. It has been estimated that only about one fifth of the people enjoy the full vigor of health. It ought not to be difficult to secure cooperation among the newspapers in an educational endeavor along the lines of established facts rather than fads or fancies. Columns dealing with hygiene and proper foods could be made attractive to an increasingly large number of readers. A nation's preeminence can be measured by the health of its people, and food habits have much to do with health.

CONCLUSIONS

1. A rational diet for young adults of average activity should contain from 2,500 to 3,000 calories. It should be a balanced diet of protein, from 80 to 100 Gm.; carbohydrates, about 400 Gm., and fats, from 80 to 100 Gm. The carbohydrate supply should come largely from so-called protective foods, milk, cereals, vegetables and fruits.

2. The most serious criticism of the diet of English speaking peoples concerns the excessive use of sugar. It is safe to say that the average per capita consumption is more than double the amount necessary for health.

3. For adults of lessened activity beyond the fourth decade, a subcalory balanced diet is often advisable. An

33. The Los Angeles Times, Jan. 10, 1930.

overweight person suffers a physical handicap which is reflected in an increased mortality rate for his age.

4. The vitamin constituents of foods are important considerations at all ages, but especially for children and for women during pregnancy or lactation. Increased virility of the race may ultimately depend on the extension of knowledge in this field of nutrition.

5. There is no conclusive evidence that protein constituents of the rational diet suggested by many investigators are responsible for degenerative tissue changes.

6. The acid-ash constituents have been overemphasized as etiologic factors in disease, and the term "acidosis" has become a popular fancy through the teachings of enthusiasts or food propagandists.

7. In the treatment of nephritis, restriction of protein beyond the point necessary to maintain normal blood nitrogen is often neither necessary nor advantageous. Patients with vascular disease, with or without hypertension, frequently show associated disturbances of kidney function, often incorrectly called nephritis. They have frequently been advised to restrict their food protein to the minimum. Such advice is not justified by the facts. Approximately 1 Gm. of protein per kilogram of body weight is necessary for nitrogen equilibrium.

8. Fads and fancies in diet are the result of misinformation fostered largely by cultists, or as the result of prejudice, on unthinking people. Many people depend on newspapers for their education. The newspapers should appreciate their opportunity for the betterment of the health of the masses through education by supplying, among other things, authentic food information.

65 North Madison Avenue.

IRREGULARITIES OF THE HEART UNDER CHLOROFORM

THEIR DEPENDENCE ON THE SYMPATHETIC NERVOUS SYSTEM *

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AND
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It has been shown by Levy that cats under chloroform anesthesia are likely to develop extrasystoles of varying types, especially when the concentration of vapor is 2 per cent or less. The extrasystoles were found to be of all grades, from isolated ectopic beats to complete tachycardia of the ventricles. Levy and Lewis were of the opinion that this tachycardia passed readily into ventricular fibrillation. When the concentration of the chloroform vapor was greater than 2 per cent, the frequency of the appearance of abnormal ventricular beats was lessened, but with a vapor of 0.5 per cent the frequency of ventricular fibrillation was increased.

Levy also found that, when epinephrine was injected intravenously into cats under light chloroform anesthesia, extrasystoles and ventricular fibrillation appeared within a few seconds. This observer showed that the lighter the anesthesia, the more readily did ventricular fibrillation appear after injection of epinephrine, but that with all concentrations of the vapor, extrasystoles were observed. He stated too that, in pithed cats with the brain destroyed and no chloroform administered, the heart remained regular when epinephrine was injected but that when 0.5 per cent chloroform was applied the heart could be made to fibrillate on the injection of 0.065 mg. of epinephrine. Hume has shown recently that the injection of epinephrine (0.14 mg.) into the veins of normal, healthy men produces ventricular extrasystoles.

The present investigation had its origin in the chance observation that decerebration at the Sherrington level abolished extrasystoles in a cat when these had been induced by light chloroform anesthesia. When the animal had been decerebrated some hours previously and then allowed to inhale a 2 per cent chloroform vapor for some minutes, the extrasystolic rhythm was not produced. Furthermore, if an animal already showing extrasystoles is decerebrated, the abnormal rhythm disappears within a few seconds after the section has been made.

These experiments demonstrate that there must be some mechanism above the level of the Sherrington decerebration the removal of which will result in the disappearance of extrasystoles induced by chloroform anesthesia.

In an attempt to determine the mechanism of this extrasystolic arrhythmia developing under chloroform anesthesia, we first of all attempted to reproduce Levy's work. He attributed the development of the irregularities to sympathetic stimulation acting on a heart rendered "irritable" by chloroform. The stimuli in the absence of chloroform are as a rule, he stated, not sufficient to precipitate the cardiac irregularities, although exceptions to this are noted. When spontaneous irregularities are not present they may be elicited by sympathetic stimulation of a direct or of reflex nature. This stimulation may be produced by epinephrine, nicotine, strychnine, barium chloride or asphyxia.

The effect of the vagus nerve on these irregularities must be considered according to the dual nature of this nerve. Stimulation of its peripheral end leads to a slowing of the heart and the abolition of extrasystoles, when these are present. Stimulation of the central end, by reason of the sensory fibers in the nerve, may cause results similar to those produced by the stimulation of a sensory nerve in any part of the body. Lastly, the section of both vagi may lead to a relative stimulation of the sympathetic nerves by the release of the heart from all vagal tone.

As a general rule, it would seem that any factor that causes acceleration of the heart or an increase in blood pressure leading to increased work on the part of the heart predisposes it to the development of irregularities under chloroform. Any agent that decreases the rate or work of the heart by altering these factors will tend to abolish such irregularities. Irregularities are therefore abolished by stimulation of the peripheral ends of the vagus by a large hemorrhage or by the injection of any drug that paralyzes the sympathetic nervous system in any part of its course.

All of these factors we have found to be in agreement with the results of Levy's experiments.

Removal of the stellate ganglions after the arrhythmia developed under chloroform abolished the arrhythmia, whereas stimulation of the stellates under the anesthesia brought them out.

It has been pointed out by Gaskell, Pavlov and others that the great majority of accelerator fibers pass into the stellate by way of the white rami communicantes of

* Read before the Section on Pharmacology and Therapeutics at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

the second, third and fourth thoracic nerves. Section of these we found also abolished the arrhythmia after a short period in which the extrasystoles were more marked on account of the stimulation induced by the trauma of cutting. Similarly, stimulation with a faradic current brought out the arrhythmia when it had not been present previously.

We also found that sensory stimulation is effective in inducing the extrasystolic arrhythmia as long as the anterior roots of the second, third and fourth thoracic nerves or the suprarenal glands have been left intact. The mechanism of their production we believe to be due to the reflex secretion of epinephrine, as well as to the reflex stimulation of the sympathetic pathways to the heart.

When the thoracic cord is cut at the level of the fifth thoracic segment, extrasystoles still appear normally on sensory nerve stimulation. If they are not present, they cannot under these circumstances be called forth by stimulation of the sciatic nerve. They can, however, be elicited by stimulation of the radial nerve. If, now, the thoracic anterior roots are cut, the stimulation of the radial nerve is not effective. If the splanchnic nerve is cut and the peripheral end stimulated, extrasystoles appear. From these observations it may be concluded that the pathway for the reflex secretion of epinephrine is severed by the section of the cord at the level of the fifth thoracic segment. Again, with the thoracic roots intact and the suprarenals removed, the stimulation of the sciatic nerve is ineffective when the cord is transected at this level. Sensory stimulation remains ineffective, provided the nerve stimulated has its entrance into the cord above the level of transection. In the latter case, the only route intact is the nerve pathway to the heart, by way of the anterior roots in the second, third and fourth thoracic anterior roots. These observations carry to a higher level in the nervous system the effects of sensory stimulation as recorded by Levy.

Proceeding now to determine the level in the brain which, when severed, abolished the extrasystoles, we found a definite region within the following boundaries: anteriorly and superiorly, a line joining the anterior edge of the superior colliculus to the posterior edge of the optic chiasma; posteriorly, a line joining the anterior edge of the superior colliculus to the posterior edge of the mammillary bodies; laterally, an imaginary plane not greater than 3 or 4 mm. from the median sagittal plane. Within this region lies a center or centers the removal of which results in the abolition of the extrasystoles when they have already been induced with chloroform.

Stimulation of this area produced extrasystoles when these were not already developed under chloroform, and we believe that such stimulation of the hypothalamus is due to (*a*) stimulation of the general sympathetic pathways and (*b*) the stimulation of the paths that are controlling the secretion of epinephrine. When the suprarenals are removed, stimulation of the hypothalamus still produces extrasystoles.

THE EFFECT OF VARIOUS DRUGS ON THE CARDIAC IRREGULARITIES

Nicotine.—Goodman Levy showed that when nicotine was injected in small doses it caused the extrasystolic arrhythmia to be accentuated and later, by a larger intravenous dose, caused their disappearance. Also the painting of the stellate ganglions with nicotine first accentuated and later abolished the arrhythmia.

Ergotamine Tartrate.—When 1 mg. is injected intravenously into an animal the heart slows, the extrasystoles disappear and the blood pressure tends to fall slightly. With the anesthetic unchanged, the irregularities tend to reappear after about thirty minutes. When 1 mg. is injected, the normal effect of epinephrine on the blood pressure cannot be produced; thus the drug in this dosage completely paralyzes the whole of the sympathetic nerve endings. The pressor effect gradually reappears as time goes on.

Caffeine.—When caffeine is injected into an animal under diallylbarbituric acid anesthesia, in an amount equal to from 35 to 45 mg. per kilogram of body weight, the heart shows extrasystoles. In a decerebrate animal five hours without an anesthetic, the injection of 2 cc. of caffeine in a 1 per cent solution produced a few extrasystoles, but the effect was transitory. When chloroform is applied, the amount of caffeine required is decreased. The section of all the nerve connections to the heart and the removal of the suprarenals have no effect whatever on the arrhythmia. From this it is concluded that the effect of caffeine is actually on the heart itself, either on the myocardium or on the sympathetic nerve endings within the heart. The production of extrasystoles in normal human hearts by the use of caffeine is well known.

Extrasystoles can be found during anesthesia with ether and diallylbarbituric acid but not as readily as under chloroform.

We have used the extrasystole as an indicator for the intactness of the sympathetic nervous system to the heart and with this we have succeeded in showing fiber tracts passing from the hypothalamus down the full length of the spinal cord and corresponding to tracts formerly recognized as sympathetic pathways after section of the hypothalamus at the level cited.

ABSTRACT OF DISCUSSION

DR. WALTER W. HAMBURGER, Chicago: Extrasystoles are a frequent type of irregularity in the human heart. They arise from various parts of the heart, the auricles, the junctional tissues and the ventricles. I am interested in the experiments of the authors from one standpoint in this connection; so far as I understand, these extrasystoles arise rather regularly from the ventricles. I am wondering whether I understand the paper correctly or whether they arise from other parts of the cat's heart as they do clinically in the human heart. Moreover, extrasystoles in the human heart arise from a variety of conditions. They can be grouped perhaps in three divisions as they are seen clinically: First, functional, extrasystoles without organic disease of the heart. These patients are individuals of rather nervous temperament who under certain emotional states complain of sudden "stoppage," "twisting" or "turning over" of the heart, and the electrocardiograph shows extrasystoles arising, from the auricles, the junctional tissues or the ventricles. Another group are the ones which occur in certain toxic states. Caffeine was mentioned. It occurs in excessive coffee drinking. They occur in the excessive use of tobacco and stop with the cessation of that use. They are not infrequently found in pregnancy, perhaps as part of the toxemia of pregnancy. They occur in certain thyrotoxic states and disappear after the administration of iodine or following thyroidectomy. Finally, there is that group which is associated with organic disease of the heart, myocardial fibrosis, coronary disease and what not, and often associated with other symptoms of organic disease, such as breathlessness, precordial pain, enlargement of the heart, or signs of congestive heart failure. I should like to ask whether, in this mechanism of the production of extrasystoles in the cat, the authors feel that it can be applied to only functional extrasystoles or whether the same pathway may play a rôle in these other types of extrasystoles. Moreover, the cat is a far removed animal from man and, again, I think the question would have to be put whether this pathway which

has been so beautifully worked out in the cat would apply to the human heart and the pathways of the vagus and sympathetic as it does in the cat. I did not quite understand the statement about the relationship of the rate of the heart to extrasystoles. Clinically, extrasystoles, at least those arising from a functional or toxic cause, often disappear on increasing the heart rate by exercise, inhalation of amyl nitrite, and so on. This point I think Lewis first brought out at a differential point between extrasystolic irregularities and irregularities due to fibrillation. If I understood correctly, the authors felt that some of these extrasystoles became worse when the heart rate was increased.

DR. GEORGE R. BROW, Montreal: The extrasystoles in all of our observations were those of the ventricular type. We at no time recorded those of auricular origin. We believe, I think, that the emotional extrasystole is due to the excessive or temporary liberation of epinephrine as well as to an increased tone of the sympathetic. The caffeine and tobacco toxic extrasystoles, as Dr. Hamburger said, I believe can be compared closely to those of the organic type in which one finds coronary thrombosis in local areas, or malnutrition of the myocardium. In all of our observations we speak only of cats, animals. The rate of the heart seemed to have an effect. If we were able to succeed at least in reducing the heart rate, the extrasystoles did disappear. I think that in clinical work one finds that an increase of heart rate not only may abolish them but also may accentuate them quite as readily. As far as the application of the cat and true comparison to man, I think we have to hold that in abeyance, but I will say that the same phenomena can be produced in the dog as far as we have investigated.

TOILET WATER DERMATITIS

WITH ESPECIAL REFERENCE TO "BERLOCK" DERMATITIS *

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Injuries to the skin from the use of cosmetics have interested dermatologists in this country for some time, and the Section on Dermatology and Syphilology of the American Medical Association has been active in trying to classify such injuries with the hope of aiding in their diagnosis and prevention.

Among the most frequently used cosmetics are toilet waters. They are on every woman's dressing table, and are not scorned by a considerable number of the other sex. Their number and variety are infinite. In 1927 Cole,[1] chairman of the Committee on Furs, Hair Dyes and Cosmetics of this section, submitted his report, which included a compilation of the answers to a questionnaire sent out to all physicians registering as dermatologists at the annual sessions of the American Medical Association from 1920 to 1925 inclusive. He had received reports of four cases of dermatitis due to toilet waters. In a previous article, toilet waters were not mentioned as causing dermatitis.[2] In 1925, Miller and Taussig[3] mentioned one patient who developed a dermatitis whenever she applied the slightest trace of eau de cologne. This makes a total of five recently reported cases due to toilet waters. Mild irritation or dermatitis is probably frequent but not reported because of its insignificance.

Sufficient attention has not been paid to the possible injury to the skin from the denaturants commonly used in the preparation of toilet waters. Manufacturers of toilet waters labor under some difficulties, as they are forced to use denatured alcohol in their preparations. Pure grain alcohol alone is the only perfectly satisfactory vehicle for these preparations but its use is prevented by the high internal revenue tax that is levied on it. In this country the prohibition authorities are fairly liberal in supplying alcohol denatured with innocuous substances for the preparation of toilet waters. On the other hand, in Canada the denaturants are practically limited to diethylphthalate and quinine hydrochloride. Neither of these drugs is adapted for such use and, as is well known, many individuals are very susceptible to quinine. Several cases of dermatitis have been traced to its use in some toilet waters manufactured in Canada, and we have seen one case of dermatitis due to a toilet water made in this country in which quinine was the denaturant of the alcohol used. Diethylphthalate does not often cause trouble to the unbroken skin, but on irritated skin or sunburned skin the burning sensation which follows its use is very objectionable. The use of any denaturant in rubbing alcohol is, in cases in which it is ordinarily used, frequently the cause of irritation to the skin. Such irritation frequently clears up of itself on the substitution of pure grain alcohol for rubbing.

Our chief object in this paper is, however, to describe a peculiar dermatitis which has received but little attention in the American or English medical literature but has been frequently described by German, French and Italian dermatologists. Most of the reported cases have been due to the use of eau de cologne. The condition is known as berlock dermatitis (Rosenthal[4]), dermite pigmentée en forme de coulée (Du Bois[5]) and dermatitis des rinnenden tropfens (Stein[6]). We also report a typical case of this eruption due to a preparation other than eau de cologne.

The history of the discovery of the cause of this dermatitis is of sufficient interest to be related briefly. It was first described by Freund[7] of Trieste in 1916. Freund reported four cases and made experiments which proved that the oil of bergamot was the offending ingredient of the eau de cologne. His report was overlooked, and at a meeting of the Berlin Dermatologic Society in June, 1924, F. Rosenthal[8] showed a patient whose eruption he called a skin disease in *Berlock Form,* and described it as follows:

> Two or three dark yellowish brown streaks of pigmentation are seen running down from the front or the back of the neck. Their upper portions are hardly visible and are poorly outlined, but farther down, and especially at the lower margin, they become more evident and darker. The streaks may also appear on the face, on the arms and on the trunk. The shape, outline and the increase of pigment toward the lowest part of the streaks is especially characteristic. They give the appearance of being caused by a dark-colored fluid running down. In the region of the pigmentation, by the use of a magnifying glass, distinct signs of inflammation are seen; dilatation of the capillaries and prominence of the openings of the hair follicles.

* Read before the Section on Dermatology and Syphilology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 26, 1930.

1. Cole, H. N.: Investigation of Injuries from Hair Dyes, Dyed Furs and Cosmetics, J. A. M. A. **88**: 397 (Feb. 5) 1927.
2. Cole, H. N.: The Dermatoses Due to Cosmetics, J. A. M. A. **82**: 1909 (June 14) 1924.
3. Miller, H. E., and Taussig, L. R.: Cosmetics, J. A. M. A. **24**: 1999 (June 27) 1925.
4. Rosenthal, F.: Hauterkrankung in Berlock Form, Dermat. Ztschr. **42**: 295 (Dec.) 1924.
5. Du Bois, C.: Dermite pigmentée en forme de coulées produite par des applications d'eau de cologne, Ann. de dermat. et syph. **8**: 539 (Oct.) 1927.
6. Stein, R. O.: Hauterkrankung in Berlock Form, Zentralbl. f. Haut- u. Geschlechtskr. **18**: 520 (Nov. 20) 1925.
7. Freund, E.: Ueber bisher noch nicht beschriebene künstliche Hautverfärbung, Dermat. Wchnschr. **63**: 931 (Sept. 30) 1916.
8. Rosenthal, F.: Die Berlockdermatitis, Dermat. Wchnschr. **86**: 242 (Feb. 18) 1928.

This is a dermatitis which I called berlock dermatitis because the streaks of pigment remind me of the pendants of a necklace or watch chain.

At the presentation of Rosenthal's first case no diagnosis was made, and the difficulties of placing the new eruption are seen by the fact that Rosenthal had thought it might be an artefact but had given up that idea after seeing several similar cases; that he had hunted for fungi; that he thought it might be a result of the action of a combination of bacteria and sweat.

In the discussion, the resemblance to oho, a disease of Formosa, was brought out. One suggested that it was a variety of chromidrosis. Another had seen three cases in none of which were fungi found but all showed hysterical stigmas.[4]

In July, 1924, W. Fischer [9] presented two cases to the Berlin Dermatologic Society. No diagnosis was made but Fischer suggested artefact or irritating substances in the clothes from the laundry, and endocrine or nervous disturbance.

In 1925, Hoffman and Schmidtz [10] discovered the cause of the dermatitis and pointed out that it had been described and explained by E. Freund in 1916.

The eruption in practically all the reported cases was caused by the application of eau de cologne to the skin after rather long exposure to sunlight, which occurred while taking sea baths. The brand known as 1711 was the most frequently implicated. In a few instances there was exposure to the sun without sea baths, and in these there was usually a history of exercise enough to cause profuse perspiration.

The location of the eruption, of course, depends on the point of application of the offending agent. The great majority of the reported cases occurred on the neck, chest, back and shoulders. Pozzo [11] reported a case occurring on the arm and Langer [12] reported one on the cheek showing the imprint of the fingers which were used in applying the cologne. Samek [13] also reported a case on the cheek.

The intensity of the inflammation that precedes the pigmentation varies from a barely noticeable erythema with no subjective symptoms to urticarial wheals as reported by Galewsky [14] and Linser [15] and actual blister formation reported by Falkenstein [16] and obtained by Freund [17] in his experimental work. Zurhelle [18] states that the inflammatory process is strongest in blonds but the tendency to pigmentation is greater in brunets. Brito Foresti [19] reported a case following the use of birkenwasser, the composition of which is not known to us.

Our patient, a man, aged 45, who was seen, May 20, 1929, had applied "Vervaine" [20] after exercise without exposure to the sun. The following day he had a marked dermatitis in the typical location on the front and back of the chest with the typical flowing lines. The dermatitis was sufficient to cause considerable discomfort for several days and was followed by marked pigmentation, which gradually disappeared after a month or two.

Several unsuccessful attempts were made to produce a dermatitis in other people by the application of "Vervaine" followed by exposure to ultraviolet radiation.

From the time of the first reported case of berlock dermatitis, attempts were made to find the ingredient of eau de cologne that causes the eruption. It was soon definitely established that in the majority of cases oil of bergamot is the irritant. But, in addition, there usually was exposure to sunlight or excessive perspiration.

Some of the results of experiments made for reproducing the eruption are as follows:

Freund [17] applied eau de cologne to a boy's forearm and exposed this surface to sun and sea water. The boy developed a dermatitis followed by pigmentation. Having ascertained that the essential oil content of the cologne used was chiefly oil of bergamot, he rubbed oil of bergamot on the forearm and exposed the surface to the sun. A blister was produced which was followed by pigmentation. Next he tried to cure vitiligo by this method but was unsuccessful.

After Hoffman and Schmidtz rediscovered the cause of the eruption and recalled Freund's early experiments, Axmann [21] in two papers reported that he was able to produce pigmentation in leukoderma after rubbing in eau de cologne. He also called attention to a commercial product supposed to cause tanning of the skin. In 1927, Du Bois [5] showed that pure alcohol produces no increase of pigmentation on normal skin. He thought the eruption due to essential oils and sensitization to light. About the same time Uhlmann [22] reported a series of experiments in which he first exposed areas of vitiligo to quartz light with the normal skin protected. He produced an erythema, but no pigmentation followed it. He then repeated the experiment, applying eau de cologne before applying the light and obtained pigmentation after the erythema had subsided. He repeated this process several times on the same patient with the result that he produced normal pigmentation in spots of vitiligo. He showed that oil of bergamot alone does not produce this result but has to be applied in alcoholic solution. In the following year Szanto [23] reported that he was successful in producing pigmentation by this method in eighteen out of twenty-two attempts. Bonnet [24] reported entirely negative results in cases of vitiligo. Recently Phipps [25] has reported the cure of a case of vitiligo by means of oil of bergamot and ultraviolet radiation. One observer also reported depigmentation as well as hyperpigmentation in cases of berlock dermatitis. It seems probable that this was caused by the presence of drops of the fluid

9. Fischer, W.: Fleckformige, Hautpigmentierung unbekannter Aetiologie (Case Presentation) Dermat. Ztschr. **43:** 58 (Feb.) 1925.
10. Hoffman, E., and Schmidtz, H.: Ueber lineär und tropfenartig begrenzte Pigmentierung nach starker Besonnung und Anspritzen mit parfumierten Spiritus (Kölnisch Wasser), München. med. Wchnschr. **72:** 1414 (Aug. 21) 1925.
11. Pozzo, A.: Pigmentazioni da acqua de Colonia e da raggi Solari, Policlinico (sez. prat.) **35:** 86 (Jan. 23) 1928.
12. Langer: Case Presentation, Zentralbl. f. Haut- u. Geschlechtskr. **25:** 515 (Jan. 5) 1928.
13. Samek: Pigmentation nach Kölnisch Wasser (Case Presentation), Zentralbl. f. Haut- u. Geschlechtskr. **23:** 615 (July 5) 1927.
14. Galewsky: Demonstration zweier Moulagen der Berlocque Krankheit, Zentralbl. f. Haut- u. Geschlechtskr. **20:** 273 (July 5) 1926.
15. Linser: Berloque Krankheit (Demonstration of Moulage), Dermat. Wchnschr. **84:** 376 (March 12) 1927.
16. Falkenstein: Eau de Cologne Pigmentierung (Case Presentation), Zentralbl. f. Haut- u. Geschlechtskr. **21:** 400 (Nov. 20) 1926.
17. Freund, E.: Hautverfärbung durch Meerbäder, Kölnische Wasser und Sonnenbäder (Case Presentation), Zentralbl. f. Haut- u. Geschlechtskr. **25:** 61 (Nov. 5) 1927.
18. Zurhelle, E.: Demonstration klinischer und histologische Befunde bei experimentellen Untersuchungen über die Einwirkung von Kölnischen Wasser, Zentralbl. f. Haut- u. Geschlechtskr. **27:** 738 (Sept. 20) 1928.
19. Brito Foresti, J.: Durch kölnische Wasser hervergerufene erythemato-pigmentierte Flecken, Rev. Dermat. **11:** 37, 1926 (special number; abstr.), Zentralbl. f. Haut- u. Geschlechtskr. **23:** 549 (Jan. 20) 1927.
20. "Vervaine" is a toilet water no longer manufactured which contains oil of bergamot, verbena, lemon grass, germain and muskketone.
21. Axmann: Behandlung der Pigmentatrophie mittels lichtsensibiler Stoffe, München. med. Wchnschr. **72:** 1918 (Nov. 6) 1925; **73:** 90 (Jan. 8) 1926.
22. Uhlmann, E.: Pigmentbildung bei Vitiligo, Med. Klin. **23:** 279 (Feb. 25) 1927.
23. Szanto Jenö: Ueber Pigmentierung nach Sensibilisierung der Haut mit ätherio Oelen (Berloque-Dermatitis), Orvosi hetil. **72:** 836, 1928; abstr., Zentralbl. f. Haut- u. Geschlkenkskr. **28:** 451 (Nov. 20) 1928.
24. Bonnet, L. M.: Pigmentations cervicales "en coulées" ou "en breloques": Rôle de l'eau de Cologne: Application thérapeutique, Lyon méd. **142:** 153 (Aug. 5) 1928.
25. Phipps, M.: Cas de vitiligo traité par les rayons ultra violets après friction à l'essence de bergamote, Bull. Soc. franç. de dermat. et syph., November, 1929, number 8.

used which acted as a mechanical filter protecting the underlying skin from the ultraviolet rays.

Attention has been called to dermatitis from toilet waters; to the various ingredients of these preparations which may be the cause of this, and also to a special form of eruption which in the majority of the cases is apparently caused by oil of bergamot. Mention has also been made of reports of experiments attempting to produce pigmentation of depigmented skin with a combination of an alcoholic solution of oil of bergamot and ultraviolet radiation, a few of which have given slightly encouraging results.

NOTE.—Since this paper was submitted for publication, a paper on berlock dermatitis by Gross and Robinson[26] has appeared. Five mild cases of pigmentation due to perfume were reported, none of them as distinctively characteristic of the disturbance as those earlier reported in the German, French and Italian literature.

ABSTRACT OF DISCUSSION

DR. JAMES HERBERT MITCHELL, Chicago: The use of perfume on the person, particularly of the female, is "an old Spanish custom," but until recently it has been applied chiefly on the clothing. With the disappearance of a large part of the clothing and the change in methods of approach, the application of perfume is made directly to the skin. In a group of patients whom I have had an opportunity to quiz at length I have found that four places have preference: the tongue, the mammary glands, behind the ears and the axillary fossae. I asked one young woman why it was applied in those spots, and she said they put it where it did the most good. The most spectacular case I saw differs from berlock dermatitis in that there was no exposure to the sun. This woman was built along generous lines and had just returned from Paris. She developed an acute dermatitis on the mammary glands, which stopped just about the line of the brassière. I asked her finally if she had purchased any new variety of perfume. She told me she had and was at once struck by the fact that it was the beginning of the trouble. She said she tipped up the bottle on each breast each time she used it. She was not exposed to sunlight but had a violent dermatitis. Several cases that I have seen in young college women have appeared in back of the ears. They were all due to the same perfume. Evidently the process was the result of a hypersensitiveness to this particular brand of perfume. I think the perfume manufacturers should realize where perfume is being applied and eliminate the irritant. One patient admitted that she had been applying perfume to the tongue and she had a violent dermatitis. I think that caution should be taken against mistaking this severe posterior auricular dermatitis for seborrheic dermatitis, which is known so well.

DR. WALTER J. HIGHMAN, New York: In connection with the manner in which this interesting phase of dermatitis venenata is accounted for in some instances I wish to relate a case which has distinct bearing on the theme, because it shows how the wife may act as an intermediary host in transmitting disease. The patient was a man with a peculiar dermatitis of his face. Detailed investigation failed to account for the eruption. Then in retaking his history it was found that the dermatitis venenata had begun coincidentally with the return of his wife from a trip south. She had been to Cuba or Bermuda and had brought back with her a perfume which she had purchased there with a most alluring French name. I fancy that on the return of his spouse who was using this perfume with the alluring name he was perhaps more closely exposed to the aroma of the perfume and its effluvia than usual. At any rate, after discovering the source of the dermatitis and asking the wife to use the perfume only when her husband was away from home, he was cured. This case proves that the wife can be an intermediary host.

DR. M. J. STRAUSS, New Haven, Conn.: Susceptibility to bergamot is a necessity. I tried out applications of bergamot over my shoulders and exposed myself to the sun but never developed a dermatitis or even a sunburn. We should not say "berlock" dermatitis for every case. This term should be reserved for the cases showing the most marked susceptibility, and not alone to the cases showing perfume to be the definite cause of a dermatitis.

26. Gross, Paul; and Robinson, L. B.: Berlock Dermatitis: Unusual Dermatitis and Pigmentation Following Use of Perfume, Arch. Dermat. & Syph. **21**: 637 (April) 1930.

CLINICAL SYNDROMES THAT INCLUDE ACHLORHYDRIA *

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BIRMINGHAM, ALA.

In the South is frequently seen a symptom complex that is exhibited with striking uniformity by an apparently heterogeneous group of diseases. This complex includes an anemia of variable degree, sore tongue, gastro-intestinal disturbances, cord changes perhaps, and achlorhydria. Any one or any combination of these may dominate the whole and give color to the clinical picture, but achlorhydria is the one salient feature. It signalizes the group.

If the anemia is characterized by an oligocythemia with a predominance of deeply staining macrocytes which show a tendency toward ovality in outline and there is bilirubinemia, it is called pernicious anemia. If there is a symmetrical dermatitis of the exposed parts, or even a marked roughening of these skin areas, it is called pellagra. If there is no dermatitis and the gastro-intestinal disturbances take the form of a persistent painless diarrhea with copious, foul smelling stools, and if the tongue has a flabby denuded appearance, then it is called sprue. If the symptoms which point to changes in the spinal cord dominate the picture and the blood is not typical of addisonian anemia, it is called subacute combined sclerosis. Or if, in spite of the severity of the illness, the symptoms are not sufficiently characteristic, then, if the physician is wise, he makes no diagnosis. The number of patients who fall into this last group is not inconsiderable.

It should be added, however, that the diagnosis is not always so unerringly arrived at as has just been stated. If, for example, the physician's interest has been centered on one or the other of these diseases, or if he happens to live in a locality where one of them appears with especial frequency, he is apt, as Christian has remarked, to call it by that name. Wood, in describing a case of sprue with a megaloblastic type of anemia in a Porto Rican who also exhibited cord changes, observed that the diagnosis was, after all, largely a matter of geography. The same case viewed by different men at different stages of its development or with different eyes is not infrequently placed in different categories; today the patient may appear to have sprue; seen at a later date he may be told that he has pernicious anemia or pellagra. The fact, then, that the diagnosis is so often determined by the momentary aspect of the disease or the bias of the physician would emphasize a possible relationship between the members of this group.

What is the nature of this relationship? And what is the meaning of the central feature of the clinical picture, the achlorhydria? To what extent is one warranted in thus regarding achlorhydria as the central feature of each of these diseases it is difficult to say, but in pernicious anemia at least it is by long odds the

* Read before the Section on Practice of Medicine at the Eighty-First Annual Session of the American Medical Association, Detroit, June 26, 1930.

most constant and characteristic as well as the earliest symptom; and it has seemed to me that in the other diseases as well it is a peculiarly characteristic symptom and that it is almost as constant. What, then, is its significance?

The problem of achlorhydria is complicated by the fact that this gastric deficiency may be experienced by apparently healthy people with perfect digestion. In fact, the widest variations in gastric secretion, from so-called hypersecretion to complete achylia, are not incompatible with the best of health. Further difficulty arises from the fact that it is seldom known in a given case how long the achlorhydria has existed. Obviously it may be acquired; or it may be inherited, more frequently perhaps than is realized. There are achlorhydria families in which some of the members, though handicapped by this defect, remain well, while others develop pernicious anemia. Among the lower animals, invertebrates do not have hydrochloric acid in their gastric secretion, and it has been suggested that the comparatively late addition of this acid to the animal digestive processes may have some significance in the frequent appearance of achylia in normal persons who enjoy good digestion. This would lend support to the view that regards achlorhydria and achylia as the expression of a constitutional defect.

Turning more particularly to the diseases under consideration, this much can be said of the achlorhydria of pernicious anemia: it is a constant symptom; it precedes the other symptoms, probably by many years; it is permanent, being uninfluenced by treatment or by spontaneous remissions; and, whatever its relationship to the illness, it is the most important single clinical feature. Can as much be said of the achlorhydria of pellagra? This is difficult to answer, for I do not know of any patient with pellagra who has ever told of an earlier gastric analysis. It is easily possible, therefore, that the hypo-acidity or anacidity of pellagra, like that of pernicious anemia, precedes the other symptoms. True, it has been suggested by those who regard pellagra as a deficiency disease that the depressing influence of the underlying nutritional fault is the cause of the achlorhydria, and if I could accept unreservedly the conclusions which Goldberger deduced from his pioneer work this theory would answer; but I feel convinced from my own experience with pellagra that the story of its causation is yet to be told.

Equally little is known of the achlorhydria of sprue or of subacute combined degeneration. Wood wrote of the achlorhydria of the former as a fairly frequent though not an invariable symptom, but among the cases seen in the South it is an almost constant feature. The same can be said of subacute combined degeneration; Hurst states that, in the pure form of this disease, achlorhydria is just as frequent as in pernicious anemia. I think it fair, then, to say of these two also that the cause of the disease and the nature of the achlorhydria are still unknown.

Since the cause of the achlorhydria in each of these diseases is unknown, is it proper to assume that the gastric deficiency is of identical nature in all? And can this lack of acid be regarded therefore as the connecting link between several members of this group? Such an assumption is probably unwarranted. Yet, without predicating a single unvarying cause, it may still be possible to regard achlorhydria as the connecting link by assuming that it is the chance accompaniment of some more ultimate underlying gastric defect which, in combination with other factors of varying nature, expresses itself in symptom complexes of such striking similarity as to bring all of these diseases within a single clinical group.

The brilliant work of Castle would suggest the validity of this last assumption. In his discovery that muscle meats that have been partially digested in the normal stomach and then regurgitated will, when fed to a patient with pernicious anemia, bring about the same blood regeneration and amelioration of symptoms as would a diet of liver, and in his further discovery that this material will in the same graphic manner relieve sprue, Castle throws an entirely new light on the problem. He concludes from these studies that pernicious anemia (and probably sprue) is a deficiency disease due to the lack of two substances, an intrinsic and an extrinsic factor. He has shown that the missing intrinsic factor is not hydrochloric acid or pepsin and that it is not carried normally by the saliva or the duodenal contents. Evidently this unidentified substance is formed in the normal stomach; this conclusion is borne out by the discovery of Sturgis that desiccated hog stomach is equally effective as a therapeutic instrument. The extrinsic factor predicated by Castle is some substance, probably a nitrogenous base, which can be produced from beef muscle through the action of the intrinsic factor.

It would appear, then, that the similarity in clinical manifestations between the four diseases under consideration may not be an entirely fortuitous one. Achlorhydria is apparently the central feature in all. Since this gastric deficiency in at least two of these diseases is merely the recognizable accompaniment of some more ultimate defect, is it not possible that this is true of all four, that its clinical significance is the same in all? This would mean that in each of these there is associated with the achlorhydria an underlying defect which is identical in all, or so closely related in every instance as to produce diseases of close similarity.

REPORT OF CASES

To illustrate the possible intimacy of relationship between the diseases of this group I will tell briefly of a few cases. Unimportant details are omitted.

CASE 1.—A woman of middle age, pale, flabby and overweight, complained of general weakness, easy exhaustion and vague pains, all of which, with occasional remissions, were of three years' duration. There was a sore tongue, anemia and complete achlorhydria. An excellent picture, one will say, of pernicious anemia; but beyond an oligocythemia the blood has never in any way been suggestive of this disease. Liver feeding in liberal quantities has never at any time produced the looked-for increase in reticulocytes. I have now had this patient under observation for two years and there is no essential change in her condition. In spite of the anemia, digestive disturbances and sore tongue one cannot call the disease pernicious anemia. I have tried to make pellagra out of it, but there is equally little justification for this diagnosis. She still eats liver, remains anemic, continues to have sore tongue and vague pains, and on my clinical records is marked "unclassified."

CASE 2.—A pale young married woman complained of profound weakness, all manner of digestive distress and a sore tongue at intervals for the past eight years; she told of profuse menorrhagia and of frequent blood in the stools. Her mental state was that of the typical neurasthenic. There was achlorhydria, but the blood was in no wise typical of pernicious anemia, and we could not find an increase in reticulocytes after liver feeding. Nevertheless, on the liver diet with liver extract her general improvement was prompt and striking and the blood approached the normal. The improvement in her mental state

and her emotional stability was even more marked, and for more than a year she has remained in excellent condition. In reviewing this patient's history of several years of invalidism before she was given the liver diet and the improvement she has maintained since, I am inclined, in spite of failure to find typical blood changes, to regard her disease as pernicious anemia.

CASE 3.—A young married woman complained of sore mouth, weakness, joint pains and diarrhea. She was pale, exceedingly thin, and showed constantly a little blood in the stools. There was complete achlorhydria. The blood has never shown the characteristics of addisonian anemia, but after two transfusions she was given liver extract, whereupon her improvement was marked. Whenever her liver diet is discontinued for long, she has a relapse; when the liver is resumed, she improves. Other meats, such as beef, have not brought the same benefit. At first I called the disease secondary anemia with neurasthenia; now I call it pernicious anemia.

CASE 4.—A woman of middle age told of nausea and vomiting with soreness of the mucous membranes of the mouth, rectum and genitals, and a profuse diarrhea without blood or mucus, which had lasted a year. She was pale and had evidently lost considerable weight. There was no free hydrochloric acid in the stomach. The blood with its large, deeply staining red cells and high color index suggested pernicious anemia, but because of the flabby, denuded appearance of the tongue and the copious, loose, foul smelling stools I made a diagnosis of sprue, and, after giving the patient blood transfusions, put her on a strawberry diet and later bananas and scraped beef. Her improvement was prompt. This cannot be regarded as a mere remission of pernicious anemia, for during the four years since I first saw her she has continued this diet and remained in good health. According to the bias of the observer this could be called pernicious anemia, pellagra or sprue. I call it sprue.

CASE 5.—A middle-aged man complained of extreme weakness, pallor and dyspnea on exertion, and because there was achlorhydria with a megaloblastic type of anemia with deeply staining red cells, a diagnosis of pernicious anemia was made. This was prior to the discovery of the value of liver, and the repeated blood transfusions which were given him proved of ever lessening benefit. The redness of the tongue became more impressive, and when it was evident that he was having increasingly frequent attacks of diarrhea, I turned to a diagnosis of sprue. He was given large quantities of strawberries and no other food. The improvement was graphic and lasting. Everybody in the small town in which he lived began eating strawberries. The diagnosis of sprue is somewhat weakened by the fact that after about a year on a diet of bananas, scraped beef, and strawberries in season, he learned of Minot and Murphy's discovery and added liver to the diet. Nevertheless, he is recorded as having had sprue.

CASE 6.—An elderly woman, who has been a gastro-intestinal invalid almost all of her adult life, complained of sore tongue, weakness, abdominal distress and occasionally a watery diarrhea. She had an eczema-like eruption on the exposed parts of the neck. There was no hydrochloric acid in the stomach, and the blood picture was that of a marked secondary anemia. The degree of the anemia and the appearance of the tongue were suggestive of late sprue, but the dermatitis pointed to pellagra. She was given the pultaceous diet useful in sprue, in which was included large quantities of bananas and some scraped beef. The improvement in her blood picture was gradual but unmistakable, and within three months the sore tongue and digestive discomforts of years had disappeared. This may be called pellagra or sprue, as one likes.

CASE 7.—An elderly woman recently found that she could walk only with difficulty. There was a spasticity of gait, which had grown more marked in recent months, and numbness in both feet. It was evident that she had spinal cord changes which produced an incomplete spastic paraplegia. There was no free acid in the gastric contents and she showed a mild anemia of the secondary type. A diagnosis of subacute combined sclerosis was made, and, for want of a better therapeutic measure, she was placed on the liver diet. That was about ten months ago; she has shown distinct improvement. She can now walk fairly well, and not only has there been no progression of the cord changes but there has been definite restoration of function. Because of the seeming improvement caused by the liver diet, should this be called pernicious anemia? In my records it is written "subacute combined degeneration."

CASE 8.—A man came for examination because his father died of an anemia of unknown origin, and his brother today has pernicious anemia. He has no free acid in his stomach, but otherwise appears to be in perfect health. He was advised to eat liberal amounts of meat and to take liver at least three times weekly. What is this man's outlook?

The difficulty of categorically labeling these patients illustrates the possible kinship between the diseases of this group.

ABSTRACT OF DISCUSSION

DR. L. JACKSON BLAIR, Cleveland: There is evidence of secondary intestinal infection in sprue, though there is little doubt that the original infection is of the yeast or mycelium variety. The etiology of subacute combined sclerosis is unknown but the most probable hypothesis points to infection. In every case of pernicious anemia I have found evidence of urinary tract infection, usually hematogenous in origin and derived originally from a focus of infection elsewhere. I have offered the hypothesis that the anemia in pernicious anemia is the result of a chronic infection of the urinary tract (or pyelitis in the broad sense) coincident with a chronic loss of leukocytes and a deficiency in the diet of the specific substance present in liver and needed for hematopoiesis. If such an hypothesis explains the development of the anemia in pernicious anemia, it seems probable that the anemia of sprue is due to the chronic loss of leukocytes from the ulcerative lesions of the intestinal tract even though the original cause of the lesions is yeasts or mycelia. There seems little doubt that pellagra is a deficiency disease. In Cleveland cases of pellagra are frequently seen, especially in Negroes who have lived for a long period on a deficient diet; namely, of alcohol with little else. If the functions of the body are to continue under such conditions, that individual must live partly on his own tissues. Castle's work has served to resurrect the theory that the achlorhydria in pernicious anemia is associated quite closely with the etiology of the disease. It is my belief that it is not an etiologic factor but is a result of the disease and its underlying basis of infection.

DR. GEORGE B. EUSTERMAN, Rochester, Minn.: In this group of diseases I would emphasize the value of a histamine check to distinguish between a true and an ordinary achlorhydria, as the former has greater diagnostic significance. However, I chiefly intend to point out other interesting clinical phases in which achlorhydria and anemia are featured. Extensive gastric resection for benign lesions, or total gastrectomy for gastric carcinoma, with resulting achlorhydria in each instance, may eventually be followed by either in local or in remote tissues, or other complications. On the other hand, Mann has performed total gastrectomy on several dogs, which have been followed since 1925 without any development of anemia. In the successful treatment of anemias of this type, in addition to the use of hydrochloric acid, desiccated hog stomach, or its equivalents, liver extract or a high vitamin regimen is required. Benign tumors of the stomach, especially the polypoid types which are said to develop on the basis of a hypertrophic gastritis, when associated with achlorhydria, may develop a grave anemia, even simulating pernicious anemia in rare instances, in the entire absence of gross or occult bleeding. Gastric syphilis, a large series of which I have just reported in another section, is associated with achlorhydria in about 85 per cent of the cases. In the advanced cases, histamine stimulation fails to provoke the secretion of free hydrochloric acid. In the earlier cases, associated with achlorhydria, the acid secretion may return after adequate antisyphilitic therapy. To confuse the issue further, however, I have never seen a severe anemia develop in such cases, followed as long as fifteen years, except when there were other obvious reasons for it. Pellagra secondary to obstructing benign and malignant lesions in the upper digestive tract, of which I have seen sixteen authentic cases, is associated with achlorhydria in about 75 per cent.

Special Article

AMBRUSTER, RUSBY—AND ERGOT

For almost three years one Howard W. Ambruster, an importer of ergot, with the advice of H. H. Rusby, has charged vociferously, repeatedly, frantically, that the Fluidextract of Ergot U. S. P. of American manufacture was grossly substandard. Controlled scientific evidence from creditable sources to sustain the charges has not been presented. Nevertheless the propaganda has continued and the charges have been broadened. Today in innumerable circular letters, in broadsides, in statements to the press and wherever he can get a hearing, Mr. Ambruster asserts there is a conspiracy on the part of the American Medical Association and of the Food, Drug and Insecticide Administration of the U. S. Department of Agriculture to approve substandard drugs. Not only has the American Medical Association as an organization been attacked; but various officials have been subjected to Ambruster's diatribes. Moreover, the American Pharmaceutical Association, the office of the Secretary of the Treasury, many pharmaceutic houses, the office of the Secretary of Agriculture, the U. S. P. Revision Committee and others have been included. Obviously Mr. Ambruster feels very deeply in this matter. Such a campaign as he has waged and continues to wage is unusual and would command admiration did there appear to be any sincerely altruistic motive for it. Unfortunately for him, THE JOURNAL has found no evidence to substantiate the charges. Both the Council on Pharmacy and Chemistry and THE JOURNAL have reported on two different occasions that there was no evidence that Fluidextract of Ergot U. S. P. as found on the market should not be used with confidence by American physicians.

Last June the Committee on Agriculture of the United States Senate held hearings on the Ambruster charges. In these hearings even gossip, surmise and garbled statements were presented by Ambruster and Rusby. The evidence permitted to go in the record was not limited to the "indictment." Members of the medical profession and officials of the American Medical Association were grossly accused by Ambruster and Rusby. THE JOURNAL presents now a chronological record of the case, which indicates many ramifications into American medicine.

I. REFUSAL OF DE CASTRO ADVERTISEMENTS BY STATE JOURNALS

In the latter part of 1927, state medical journals were circularized by one Manuel De Castro, asking for the lowest rates on advertising. De Castro was using the trade style "Confidential Trade Information Bureau," and was doing business from a post-office box in Closter, N. J. De Castro's stationery bore the statement that Dr. Henry H. Rusby was the "Consulting Editor." [For discussion of Rusby see later.]

De Castro submitted to the state journals an advertisement in which it was charged that the enforcement officers of the United States Department of Agriculture were permitting substandard and impure ergot to enter the United States and to be used in the manufacture of fluidextracts which were not up to U. S. P. standards.

Records in the A. M. A. Bureau of Investigation brought out the fact that Manuel De Castro, some ten years previously, was in the "patent medicine" business, trading under such names as "Acidulated Drug Company," "De Castro-Mills Company" and "Acetyl Chemical Company." De Castro at that time was circularizing physicians, urging them to push his "patent medicine" and offering to split the profits with the physicians. The state journals asked the American Medical Association for an opinion concerning the acceptability of the advertisement. Their editors and publishers were apprised of the foregoing facts and advised not to accept the advertisements. They were informed that the charges of De Castro against the Department of Agriculture were such that it would be highly improper for the state journals to publish the copy without verification. The state journals refused the copy. The first refusal apparently came from the *Ohio State Medical Journal*. On Jan. 10, 1928, a long night letter was received by the American Medical Association from Manuel De Castro. Besides protesting against the advice to refuse the advertisement, De Castro stated:

". . . I DEMAND IMMEDIATE APPROVAL AND RELEASE BY YOU OF MY ADVERTISING COPY ADDRESSED TO PHYSICIANS AND HOSPITAL SUPERINTENDENTS AND IF YOU DELAY YOUR APPROVAL ANY LONGER I SHALL INSTRUCT MY ATTORNEY TO TAKE SUCH ACTION AS WILL ENSURE THE WIDEST PUBLICITY TO BE GIVEN TO YOUR ATTITUDE REGARDING THIS MATTER STOP ANSWER BY WIRE."

This communication was ignored.

Investigation disclosed that De Castro was apparently connected with one Howard W. Ambruster, who admitted that, since August, 1927, he has been engaged in the business of importing crude ergot from Spain. It appeared further that there prevailed practically a corner on Spanish ergot. A reporter for a drug journal known as *Drug Markets* made an affidavit that Ambruster and De Castro admitted to him in September, 1927, that they had cornered the Spanish ergot market and that they would probably be able to run the price up to $6 a pound. Recently Ambruster has denied this statement.

At this time THE JOURNAL commented editorially on the situation [A Flier in Ergot?] in part as follows:

The advertisement submitted by De Castro was a serious charge against the United States Department of Agriculture, to the effect that the enforcement officers of that department have been and are permitting substandard and impure ergot and other drugs to be entered into the United States and used in the manufacture of fluidextracts which are not up to U. S. P. standards. The Department of Agriculture, of course, needs no defense from the medical profession. It is sufficient to say that there is not the slightest justification for the charges made by Manuel De Castro or his Confidential Trade Information Bureau. Just what are the motives back of this campaign, we do not know. That either De Castro or his Confidential Trade Information Bureau will pay thousands of dollars for advertising space in medical journals for the nominal purpose of protecting the public against substandard drugs is a thesis so fantastic as to arouse the risibilities. It is a well known fact in drug circles that within the past few months there has been a highly speculative movement in the ergot market, and at least one responsible drug journal asked whether or not there was a "corner" in ergot. Last September, the stock market for ergot advanced in a few days from 85 cents a pound to $1.75 a pound.

II. THE RUSBY ANGLE

Shortly after publication of THE JOURNAL'S editorial (which mentioned the name of H. H. Rusby), a communication was received from H. H. Rusby (Jan. 26, 1928), written on the stationery of "Columbia University, College of Pharmacy of the City of New York—Office of the Dean." Dr. Rusby devoted more than one half of his two and one-half page letter to

emphasizing that he had never received a penny from Mr. De Castro or anybody connected with him. Some months ago [before January, 1928—ED.], he wrote, "Mr. De Castro informed me that he and Mr. Ambruster intended to resume the importation of Spanish Ergot."

Almost simultaneously there appeared various articles by Rusby claiming that the ergot on the market other than Spanish ergot was moldy and putrid; that the fluidextracts, therefore, were below standard, impure and dangerous. These or essentially the same statements have been made repeatedly by Rusby. Rusby, it appears, was the scientific stalking horse for the propaganda against any ergot except Spanish ergot. At no time was there offered evidence of a convincing nature from unbiased sources. In fact, the Rusby articles in scientific journals even were devoid of what in THE JOURNAL'S opinion constitutes "scientific evidence." Furthermore, THE JOURNAL and the various officials of the A. M. A. Headquarter's Office have not had confidence in the scientific accuracy of Rusby or in statements emanating from Rusby for some time. Who, then, is Rusby?

H. H. Rusby, Newark, N. J., was dean of the School of Pharmacy of Columbia University until quite recently, when he retired at the age of 75. He is a graduate in medicine from New York University. His ability as a medical botanist has been recognized. His clinical experience, according to his own testimony, has been limited. Yet with this limited clinical experience he testified for Wine of Cardui, against the American Medical Association in 1916, to the effect that a fluidextract (20 per cent alcohol) containing viburnum prunifolium and blessed thistle would be useful in *treatment* of female diseases! Those who are interested in the unscientific character of the testimony offered by Rusby on behalf of the "patent medicine" Wine of Cardui, will find a reproduction of it in THE JOURNAL (July 8, 1916, p. 135). At that time THE JOURNAL commented editorially in part as follows:

> Apparently, however, he [Rusby] was willing to qualify also as a physician, although his experience in the practice of medicine seems practically to have been limited to one year's employment as clinical clerk in a lunatic asylum some thirty years ago. This may help to explain Dr. Rusby's weird conceptions of the anatomy of the female pelvis. Dr. Rusby was quite sure that Wine of Cardui would be "useful" as a "diuretic," as "a stimulant of intestinal action," as "a tonic and appetizer," as "beneficial to nutrition," and, last but not least, as "a stimulant to unstriped muscular fiber." Dr. Rusby regarded such a mixture "as a uterine tonic" whose action would be "beneficial" in its general tendency "by increasing the nutrition of the muscles and toning the muscles up so that they would support the uterus better."

The Wine of Cardui case, our readers will remember, was brought by the Chattanooga Medicine Company after THE JOURNAL had exposed the nature of the preparation and of its advertising as a part of the regular work of its Department "Propaganda for Reform."

In October, 1926, Rusby appeared as one of the witnesses for Slends, Inc., in a hearing brought by the Post-Office Department before the Solicitor "in the matter of charges that Slends, Inc., et al., are engaged in conducting a scheme for obtaining money through the mails by means of false and fraudulent pretenses." It will be recalled that Slends was a chewing gum recommended for obesity, containing among other things phenolphthalein and phytolacca. Herewith is a sample of Dr. Rusby's testimony taken from the stenographic transcript in the Slends case (about the action of phytolacca, which he claimed contained a saponin):

> " . . . Saponin is probably the greatest grease and fat remover that is produced by the vegetable kingdom. It is largely used by milk men for cleaning off the grease and fat which has accumulated on milk bottles and milk cans, which is very difficult to remove. A small amount of saponin put into that immediately removed that grease. It is essentially a grease remover or fat remover, and in the intestines, as to how it removes fat, it is a peculiar method which is not understood. It does not combine with the fat as mechanical combination takes place. It does form an emulsion with the fat which would tend to remove it, but the amount of fat that it takes hold of and carries away is far greater than either of those things would account for. It acts in some way that is not understood but a very small amount of saponin will remove a large amount of grease.
>
> "Therefore I hold that saponin in the intestine would remove fat from the intestine because you remember that this phytolacca at the same time specially used with other drugs is then carried out of the system together with the fat it has taken hold of and associated itself with, and I hold that it is true that the saponin in the phytolacca in the intestine will tend to prevent the absorption of that portion of the fat which is in the intestine and which otherwise would be absorbed by the lacteal glands of the intestines."

In an affidavit for Slends, Inc., Dr. Rusby also stated in part:

> "I have carefully considered and studied the formula of the medicated gum called 'Slends' as determined by the chemists, Seil, Putt & Rusby. In my opinion, formed after careful consideration, this gum made to contain 1.43 grains of phenolphthalein per tablet, and .10 grains of phytolacca root per tablet, when taken as directed on its box container (of which a sample is hereto attached) can have no deleterious effect upon the person using it. It is also my opinion, arrived at after careful study and consideration, that said gum so constituted and taken in accordance with said directions, will operate to reduce overweight or excess fat in a patient, where said fat or over-weight is due to over-eating and insufficient elimination." [1]

More recently, Rusby's name and picture have appeared in connection with Fleischmann's Yeast advertising. His testimonial is typical:

> "Dean H. H. Rusby, M.D., . . . says in his *forthcoming book* [italics ours—ED.] 'Materia Medica': Yeast cleanses the system. In continued small doses it is often of service in overcoming habitual constipation. Its effect is to promote appetite and digestion. . . . For 40 years I have lectured to students on the value of yeast in these directions."

Dr. Rusby's reply to the charge that he had given this testimonial concerning the Fleischmann's Yeast was:

> "I have never expressed any opinion in private or public concerning Fleischmann's Yeast. I had written an article on 'Compressed Yeast' for my text-book on materia medica, and I offered the use of the whole or any part of this article, provided it were placed in quotation marks and credited to my book and that it contained no mention of any particular make of yeast. I made no demand or suggestion of compensation in making this offer."

The pages of THE JOURNAL will be open to publication of a statement from the Fleischmann Yeast Com-

1. In the Senate hearing at Washington, the officials of the American Medical Association, at the request of members of the Senate Committee, brought out the reasons for their lack of confidence in Dr. Rusby's scientific statements. The reference was made to both Wine of Cardui and Slends testimony. In a published reply, Dr. Rusby denied in essence that he had testified on behalf of these products. This denial by Dr. Rusby explains why space is taken to reproduce some of Rusby's testimony. In his rebuttal statement, Dr. Rusby stated: "I have never spoken a word about 'Slends' except in condemnation of the article and of its advertising, in public or in private. . . ." It is difficult to reconcile the sworn statement of Dr. Rusby which appears in the record of the Slends case with his signed statement of June 18, 1930.

pany denying that Dr. Rusby was compensated in any way for the use of his testimonial or picture.

In connection with the recent Pharmacopeial Convention, Dr. Rusby was termed the "sacred cow" of certain drug interests which worked against the better interests of medicine and physicians. (See editorial, THE JOURNAL, May 24, 1930, p. 1707.)

These facts are given in this chronological review, simply that the readers of THE JOURNAL may judge why the officials of the American Medical Association have no confidence in statements made by Rusby concerning commercial articles; why they took little stock in the ergot charges emanating from this source.

III. THE AMBRUSTER PROPAGANDA

From January, 1928, De Castro began to fade out of the ergot picture. In his stead the propaganda as well as sales end was directed by Howard W. Ambruster, a chemist of New York City.

The first communication from Mr. Ambruster to the American Medical Association was addressed to the Secretary, requesting "whether in the opinion of the Board of Trustees of the American Medical Association, it is possible to make U. S. P. fluidextract of Ergot out of crude Ergot, which is not U. S. P." In this letter he further invited the American Medical Association to enter into what he termed a "commercial fight" in which he admitted he was interested. In reply, Mr. Ambruster was told that the American Medical Association was interested in the matter only to the extent of doing "what it can to protect the medical profession and through the medical profession to protect the public against imposition."

This was soon followed by another letter containing requests from Mr. Ambruster as to what stand the American Medical Association should take. This letter, as well as *all subsequent letters from Mr. Ambruster, were ignored.*

The period from January, 1928, until nearly a year ago was rather quiescent as far as Ambruster circular letters were concerned.

On Feb. 25, 1929, there was addressed a letter to Dr. George H. Simmons, as editor of THE JOURNAL. This was followed by a letter to Dr. Simmons dated March 5, and another letter dated March 11, each letter becoming more insolent and less guarded in the statements made. Scientific evidence was never offered. Evidently, Mr. Ambruster was unaware that Dr. Simmons had retired as editor of THE JOURNAL in 1924.

A second series of letters (called Series B by Ambruster) began with one addressed to the Secretary of the American Medical Association dated March 18, 1929, followed by two letters addressed to Dr. Fishbein as Editor of THE JOURNAL, dated March 26 and March 28, respectively. Evidently Mr. Ambruster had just been informed of a change in editorship of THE JOURNAL, which took place five years previously.

Then came Series "C," as Ambruster labels these letters, two addressed to Dr. E. Fullerton Cook, Chairman, Committee of Revision of the United States Pharmacopeia, dated April 9 and 13, 1929, respectively; the third letter of this series was addressed to Dr. Fishbein, dated April 25, 1929. These letters had gained in length and the innuendos were also broadened. They were characterized first by an attempt at defense on the part of Ambruster, and secondly by asking many questions without stating actual facts. It is worthy of note and emphasis that many of these communications were received at the Association office in the form of circular letters before the original letter itself had reached the person addressed. In other words, the letters were reproduced in printed form before the originals were mailed to the addressees. In all of these letters the charges were vague; there is an utter lack of scientific evidence that fluidextract of ergot on the market is substandard and that its use causes deleterious effects to parturient mothers. Also much collateral material was brought in, such as the charge that the quality of ether was dangerous, that meningitis serum was below standard, that digitalis was not standard; that there was a combination of drug houses and the American Medical Association; that the U. S. Department of Agriculture was not enforcing the law; that the American Medical Association was depending on the federal authorities to enforce U. S. P. standards on ergot while the federal authorities continued to admit and permit to be used substandard ergot.

Apparently Ambruster has developed a frame of mind in which he considers himself a persecuted crusader. Of interest is a portion of a letter from him which one of the physicians forwarded to this office:

> " . . . Man after man in your profession has had to receive from me the first information *he has ever had* that such conditions existed, and then after a few indignant exclamations, not to be quoted, they lapse into silence, permitting that brave and courageous man, Henry H. Rusby, to carry the brunt of the battle and to be crucified for so doing by the stool pigeons in the medical profession under secret retainers from these drug crooks who will be driven out of the profession in disgrace when the real reasons become known for their 'hush hush' 'it isn't so' campaign to keep it quiet.
>
> "I would have quit this fight long ago and let the medical profession stew in its own juice if it were not for the example of moral courage set by Henry H. Rusby and the urgings of many excellent medical men who have urged me to continue.
>
> "Within the last few weeks I have gotten response in the form of recognition from independent medical journals and from the daily press as you will note from enclosures herewith. They are now sending alleged friends to me begging me to keep quiet but meanwhile the campaign of attempted blackmail, coercion and threats continues. My home is under two foreclosures, one a fake, my good merchandise has been destroyed by a fire of unexplained origin in a bonded warehouse, where it was supposed to be under the protection of the Federal government, one bank after another tries trickery and open dishonesty to injure my credit or ruin me. The only thing they have not done yet is shoot me in the back, they haven't got the courage or guts to do that because the one thing they can't stand is to have the subject exposed for public discussion.
>
> "Until it is exposed and thrashed out in public you doctors are going to continue prescribing rotten medicines, worthless serums, poisonous anesthetics in the innocent belief that you are helping your patients and then wondering why your boasted knowledge of Materia Medica so often fails."

IV. WHAT WERE THE CHARGES IN REFERENCE TO ERGOT [2]

Reduced to simple terms, the charges were that the government had entered into a conspiracy with crude drug importers and manufacturers of important preparations to boycott a large importation of crude ergot of rye imported into the United States by Howard W. Ambruster in the fall of 1927, and alleged by him to be the only sound, safe ergot available on the American market. Secondly, by laxity and inefficiency in the enforcement of the law, the federal food and drug officials were continuously permitting the importation of crude drugs such as ergot, and the interstate shipment of preparations of these drugs of such character

2. This résumé is held strictly to ergot. Apparently, in order to stir up more smoke from time to time, other subjects were included by Ambruster. As these do not directly concern the point of discussion in this article, consideration of them is omitted.

as to render the medicines made from them dangerous. It was alleged by Mr. Ambruster that as a result the deaths among infants and mothers had increased at an alarming rate in the United States because impure ergot preparations were used. The responsibility for these conditions was laid at the door of the United States Department of Agriculture and those members of the drug trade and of the medical profession as represented by the American Medical Association, which, it was alleged, had joined with the government officials in this conspiracy. Interwoven with these charges were many others against other organizations or individuals which had stated opinions contrary to what Mr. Ambruster would have them state.

CHEMISTRY OF ERGOT

In order that the physician may be better able to appreciate the chemistry of ergot, around which most of the argument rests, a brief outline is given:

Ergot is a fungus *(Claviceps purpurea)* growing in the grain of cereals, the official being obtained from rye. The fungus goes through several stages of development, the resting stage constituting the drug. The composition of ergot is complex; several active constituents have now been isolated in pure form. The most important are the alkaloid ergotoxine (ergotamine), ergotinine, several aromatic amines, especially tyramine and histamine and choline derivatives. When fluidextract is prepared from ergot, the alkaloids are extracted. However, as physicians will recognize, fluidextract of ergot because of its alcoholic content is not suitable for hypodermic injection. In modern obstetric practice there is necessity on the part of the obstetrician to use hypodermic injections. For this purpose, therefore, there has been prepared by various pharmaceutic houses an aqueous extract which does not contain the alkaloid (because it is insoluble in water) but containing some of the amines, generally called putrefactive amines because they are identical with some of the amines found in putrefaction of meat. It is to be noted that the putrefactive amines are normal constituents of ergot as found on the market. More recently there has been isolated and offered on the market ergotamine, which is now described in New and Nonofficial Remedies as Ergotamine tartrate. This also lends itself to hypodermic injection. However, in hospital practice, when a patient receives an anesthetic during the delivery, obstetricians give very little fluidextract of ergot, but instead give hypodermic injection of solution of pituitary extract or of ergotamine tartrate. To sum up, therefore, ergot contains a mixture of substances the alkaloids of which are predominant in the fluidextract, the amines of which are predominant in the aqueous solution. This is important for what is to follow. The original charges of Rusby and Ambruster dealt with fluidextract of ergot.

V. THE A. M. A. INVESTIGATION

The American Medical Association promptly made as thorough an investigation as possible to determine the truth or falsity of some of the accusations. Inquiries brought out that not only had there been no lessening in the carefulness of administration of the food and drug laws but that especial care had been taken to see to it that all importations of ergot complied strictly with the law before they were admitted or made available for use by manufacturers. Pointed inquiries were made of some of the most reputable manufacturers of preparations of ergot. Leading obstetricians were solicited as to whether or not they had found fluidextract of ergot substandard. Evidence was not forthcoming to sustain the charges. The Council on Pharmacy and Chemistry gave careful consideration to Mr. Ambruster's charges on more than one occasion. A report was submitted to the Council by an eminent authority showing that the same conditions obtained with respect to the quality of ergot preparations on the market that had always obtained; namely, an occasional preparation was found to be inert because it had been kept in stock for a long period, or for other reasons which have always been operative.

The extensive files of the Council on Pharmacy and Chemistry and the Chemical Laboratory of the American Medical Association were also consulted. It was found that there had been only one complaint made concerning fluidextract of ergot by a practicing physician. When this was traced it was found that the complaint was, after all, not concerning fluidextract of ergot or any official preparation but was in reference to a hypodermic preparation. At this time the Council issued a statement on the ergot situation as follows:

Ergot Importations.—The Council considered certain allegations that inferior and unfit ergot is being imported and used for the preparation of the pharmacopeial fluidextract. No evidence of untoward effects from the present use of fluidextract of ergot was available, and official government assurances were presented that, since Sept. 1, 1927, ergot had not been imported which did not in fact meet satisfactorily the pharmacopeial requirements. It was decided that no report on this matter is required on the part of the Council at this time. (THE JOURNAL, April 27, 1929, p. 1430.)

An excellent summary of the activity of official preparations of ergot was contained in an editorial in the May 10, 1930, issue of THE JOURNAL, which concluded:

There is no real reason why the American physician should not continue to use with confidence fluidextracts made by reputable firms in accordance with the Pharmacopeial method and shown by proper methods of assay to contain the activity required by the Pharmacopeial standard. If he uses other than official preparations, he should convince himself that the nonofficial preparation used actually possesses the properties characteristic of a standard ergot preparation. If it has been accepted by the Council on Pharmacy and Chemistry for New and Nonofficial Remedies, the composition and efficiency may be depended on.

ACTION OF AQUEOUS EXTRACTS

During this time and quite independent of any propaganda on the part of the Ambruster-Rusby group, the Council on Pharmacy and Chemistry issued a report on Ergotole, Extract of Ergot Purified, Ergotin-Merck, Liquor Ergot-Mulford, and Secacornin, announcing the omission of these products from New and Nonofficial Remedies. In this report it was stated that the Council's referee on ergot preparations had reported assays of special brands which showed the preparations to contain less than 10 per cent of their claimed strength as measured by ergot content. In other words, they were found practically devoid of specific alkaloids. The products named were water extracts of ergot, containing little or none of the specific alkaloids of the drug which have proved valuable in therapeutics; with one exception they were not assayed by any method which showed their alkaloid content; and, finally, examination of each of the preparations by biologic methods which measure alkaloidal content had shown that they were indeed practically devoid of such specific alkaloids. In the report of the Council, the statement was made that these products contained putrefactive amines. The phrase "putrefactive amines" was seized on by Rusby and Ambruster, misconstrued and garbled. To chemists "putrefactive amines" does not mean that the agents are putrid; it is a term applied to certain amines which were obtained and identified years ago through

putrefactive processes. Witness, however, how the Ambruster-Rusby group changed the meaning (circular letter of Ambruster):

"The Council of Pharmacy of the American Medical Association has officially condemned as *putrid* and impotent the following ergot preparations: . . ." [Italics ours.—ED.]

In no place in its report did the Council condemn the products because they were "putrid" or use the term "putrid."

Henry H. Rusby, advisor to Ambruster, went even further than Ambruster in an address before the New Jersey Pharmaceutical Association. Dr. Rusby stated:

". . . They were then safe and fairly efficient because made from sound ergot, but now they are very inefficient and unsafe because made from putrid ergot. . . ."

In view of the misleading statements, the Council issued an explanation on September 7 of the same year. Particularly pertinent is the second paragraph of that report:

Inasmuch as there seems in certain quarters to be some misunderstanding of the Council's action, the Council has deemed it wise to amplify the published statement by pointing out that the reasons for omitting these preparations from New and Nonofficial Remedies are exactly as stated in THE JOURNAL and none other. These reasons are based primarily on the mode of manufacture of these preparations as a class, as a result of which, as pointed out, the specific alkaloids of ergot are almost entirely absent from the preparations. This theoretical objection is supported by the biologic observations. The Council wishes to emphasize as strongly as possible that no evidence whatever was found which would indicate that in any case there was adulteration, or that improper ergot had been used in the manufacture of the product. Nor was any preparation found to be unduly toxic. The statement of the action of the Council then as it appeared in THE JOURNAL is complete and is not to be construed otherwise.

In all of the mass of charges there was only one point which might in any way have been debatable. It appears that, previous to 1927, there had been permitted to be imported under bond three small batches of ergot which was sound in every respect except that it was subpotent. The government permitted under regulations 30, manufacturers to use an excess of subpotent material to make up fluidextract so long as the fluidextract assayed 100 per cent. Dr. Rusby contended that the Pharmacopeia never intended that subpotent ergot should be used. On the other hand, the government contended that the Pharmacopeia made definite provisions. In fact, the Pharmacopeia directs the adjustment of fluidextract to 100 per cent. There is no evidence of any deleterious products being present in the preparation fluidextract ergot. Rusby's charges on this point were more technical than scientific. Furthermore, the records of the Department of Agriculture show that the physical character of ergot has been entirely satisfactory for many years, and since July, 1927, not even subpotent crude ergot has been admitted. It will be recalled that all of Rusby's charges have been made since December, 1927.

VI. THE REPORT OF DR. ILL FOR THE ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS

The Association of Obstetricians, Gynecologists and Abdominal Surgeons some time ago appointed a special committee to report on the allegations of dangerous fluidextract of ergot on the market. The physician appointed chairman of the committee was Dr. Edward J. Ill, a prominent obstetrician of Newark, N. J., who it was stated had been a personal friend and neighbor of Dr. Rusby for a great many years. The other members of the committee were Drs. John O. Polak and Walter T. Dannreuther of New York. Last winter the report of the "committee" was submitted to THE JOURNAL A. M. A., for publication. The editor asked for time to refer it to the Council on Pharmacy and Chemistry. During this time, however, it was found that the report of the committee had already been widely circulated; it had been seen by the editor of *Nation*, by Rusby and Ambruster, by the federal officials in Washington, as well as by representatives of the *Oil, Paint and Drug Reporter*. Obviously THE JOURNAL could not accept the report as an original contribution. Furthermore, an analysis of the article showed that it could be summed up in simply four words: "The committee believes Rusby." For a report of a scientific group it was surprisingly devoid of any acceptable evidence whatever. Unfortunately, there were even places where quotations were made to fit the thesis of the paper rather than being complete or fair quotations. For instance, in the case of the quotation on the work done by Mr. Thompson of the Department of Agriculture, the quotation stopped in the middle of a paragraph and did not even go to the end of the sentence. Had the entire paragraph been included, it would have put a different interpretation on the article. (For discussion of how the quotation led to erroneous conclusions, reference is made to the Official Records of Hearings for Thursday, June 26, 1930, page 1643.) The clinical evidence, in the opinion of the referee of the Council and THE JOURNAL, was not confirmed by others.

As was explained by Dr. Torald Sollmann before the Senate committee which held hearings in this matter, it is quite difficult to agree with Dr. Ill as to the possibility of testing ergot, or the quality of the fluidextract, by comparing different samples by tests on patients. The clinician who gives ergot does not take it himself but gives it to another individual, with whose reactions to ergot he has had no experience. Reactions of different people differ quantitatively. The obstetrician may give ergot to a woman who is probably one that he had never had occasion to observe under similar conditions, or perhaps he has never observed her in labor before. At any rate the conditions are never exactly the same. He has had no experience in the matter of that individual's reaction. For judging the action of ergot clinically, physicians do not have anything even as definite as pulse rate to fall back on. What ergot may be expected to do in these cases is to quicken and make stronger a process that is going on naturally; namely, the contraction of the uterus at birth. Whether or not the product would be 80 per cent of activity or 100 per cent of activity it is impossible to tell by clinical evidence. And it has only been relatively recently that a biologic method of testing has been available so that the product could be assayed.

In connection with the Ill report, one of the members of the committee, Dr. Polak, had acknowledged one of Mr. Ambruster's communications in the previous August. Mr. Ambruster used this communication in such a way as to make it appear that Dr. Polak had stopped using fluidextract of ergot in his practice because the fluidextracts were so manufactured as not

to be reliable. Inquiry was made from Dr. Polak at that time. He replied as follows (Aug. 12, 1929):

"Your letter relative to my communication to Mr. Howard W. Ambruster relative to ergot at hand. I did write Mr. Ambruster that we no longer were using the fluid extract of ergot in our clinic or private practice, but the reason for this was *not* because we were having unreliable preparations furnished us, but because the hypodermic preparations of the ergot derivatives and pituitary solutions were better suited to our needs. For nowadays almost all labor cases have anesthesia and consequently when an oxytocic is necessary it is better to give it hypodermically. Likewise in the post partum period to maintain uterine retraction and contraction we use the extract of ergot in pill form. These I believe are pharmaceutical niceties which are more agreeable to the patient, hence the discontinuance of the use of the fluid extract of ergot. I did not mean to convey the idea that the preparation of ergot which we have always used (Squibb's) was ineffective. Hoping that this explanation clears my position. . . ."

Thus one of the members of the committee stated that he had no evidence that fluidextract of ergot was deleterious or substandard. In addition, Senator Copeland had written to both Dr. Dannreuther and Dr. Polak asking if they would come to Washington. In communications to Senator Copeland, both asked to be excused. Dr. Dannreuther's letter contained the significant statement:

"Dr. Ill, chairman of the committee, is its best informed member, and I am sure that Dr. Polak and myself could not add anything of value to his testimony. As is usually the case, the chairman has done all the work." (Stenographic transcript of hearing, June 17, 1930, page 691.)

To those who have followed the Senate hearing it was rather amusing when the government officials showed that some "fluidextract of ergot—Rusby" obtained on the shelves at St. Barnabas Hospital, Newark, N. J., where Dr. Ill practices, was found grossly substandard! Dr. Ill had previously testified that Fluidextract of Ergot Rusby, made from Spanish ergot, was very fine, whereas other fluidextracts were not. In sharp contrast to this was the government's figures that one unopened bottle of Fluidextract of Ergot Rusby assayed only 66 per cent standard and the other, an opened bottle, less than 50 per cent standard! (On inquiry the Government states that when the assay was completed after the trial, the material was proved to be inert.) "Fluidextract of Ergot U. S. P.—Rusby" was claimed to be made by Meyer Bros., St. Louis, from Spanish Ergot of Ambruster, and standardized by H. H. Rusby.

Succinctly stated, the Ill report simmers down to a reiteration of the Rusby charges by a friend of Rusby's. It is a one man report. It was offered for publication without having been referred back to the Association of Obstetricians, Gynecologists and Abdominal Surgeons; it contained no scientific evidence and the only useful purpose it served was to lend dignity to the charges emanating from the Rusby-Ambruster quarters by being able to use the name of the organization coupled with the names of three well known and prominent obstetricians. In the opinion of THE JOURNAL, if Dr. Ill had taken proper precautions to present a fair report, it should have included both sides of the question. Dr. Ill at no time communicated with the Council on Pharmacy and Chemistry for information. The report makes clear that Dr. Ill, honest and well meaning as he may be, is not particularly versed in the matter of weighing therapeutic evidence. Certainly the organization he represents has no such facilities to investigate commercial products as have the American Medical Association and the government.

VII. REFUSAL OF THE SECOND ADVERTISEMENT

On May 24, 1929, advertising copy for Fluidextract of Ergot Rusby was submitted to THE JOURNAL. This copy extolled the virtues of fluidextract of ergot approved and guaranteed by Henry H. Rusby. It also quoted a statement from the *New York Medical Journal*, the Medical Society of the State of New York, which could not be accepted as correct. Furthermore, THE JOURNAL does not and did not have confidence in any biologic assays made by Henry H. Rusby. There was also a statement in the advertisement in regard to the admission into this country of importations of substandard crude ergot by the U. S. Department of Agriculture which did not correctly present the facts. Naturally, the advertisement was not found acceptable.

VIII. SENATE COMMITTEE HEARINGS

For some years Mr. Ambruster has been urgently demanding a Congressional investigation along with his other demands. It was not until Feb. 12, 1930, that a preliminary hearing was accorded him by the Senate Committee on Agriculture and Forestry under the chairmanship of Senator McNary. Further action was not taken on this matter by the committee until May, 1930. At about this time Senator Burton K. Wheeler (Montana) permitted an article to be published under his name in *Plain Talk* reiterating practically all the charges which Rusby had made, and particularly implying that the enforcement by the U. S. Department of Agriculture was not what it should be. In view of this article, Mr. W. G. Campbell, director of regulatory work of the Department of Agriculture and chief of the Food and Drug Administration, made an earnest request to the Senate Committee to carry out the investigation. This request was granted in May and the hearings were started, June 3, 1930, and finally terminated, June 30.[3] This dragged through a period of more than four weeks of the hottest part of the summer. For the first two weeks, Mr. Ambruster filed charge after charge against the government officials and others. Some matters discussed were highly technical in character and it was obvious that many of the Senators who patiently gave their time to the matter were sorely puzzled as to what it was all about. The exceptions were Senators Hatfield and Copeland, both qualified medical men, the latter not a member of the committee but sitting in the hearing at the request of Chairman McNary because of his technical qualifications and his well known interest in public health matters. The thanks of the medical profession are due to these men; in such a free hearing as a Senate committee hearing, many phases of medicine and public health would not have been heard except for the technical knowledge which these men possessed. For much of the time, Senator Hatfield was acting chairman of the committee, while Senator Copeland, in a most effective manner, carried on the bulk of the examination of witnesses from the medical standpoint.

3. Probably the most complete abstract of these hearings appeared in the Oil, Paint and Drug Reporter of June 9, 16, 23, 30 and July 7. In the preparation of this article, THE JOURNAL has had available at this time not only the enormous amount of material collected over a period of years but also the complete stenographic records of the hearings before the Senate committee. For one who is sufficiently interested in obtaining the actual facts of this "controversy," it is strongly urged that the official transcripts be consulted.

Senator Wheeler, who wrote the article for *Plain Talk*, also sat on the Senate committee which heard the investigation. The attitude of Senator Wheeler appeared to be that of one who wished to believe the Ambruster charges; his questions appeared to the A. M. A. officials who attended the hearing to be generally framed with that in view and with a definite antagonism toward the medical profession.

During the two weeks devoted to the charges of Mr. Ambruster, Dr. Rusby and Dr. Ill, the government representatives were subjected for the most part to a shower of invectives and accusations. Nor were other organizations spared; in fact, ridiculous and grossly unsubstantiated charges were made against the American Medical Association and its officials. It was asserted that the American Medical Association had entered into a conspiracy with the government; allegations were also made by Mr. Ambruster that the editor of THE JOURNAL appointed the Council on Pharmacy and Chemistry to pass on preparations; that they take a secret vote as to whether or not they shall pass them. After they get in, they take another vote, occasionally, to throw them out; that the editor counts the votes so that he has control of the drug situation. These statements are absolutely false.

In the course of time it began to dawn on even the nontechnical observers that the charges preferred had a notable similarity in one respect. They were quite generally introduced with such phrases as "I am reliably informed," "It is my belief" or "I have reason to think." Most of Mr. Ambruster's supporting witnesses, with the exception of Drs. Rusby and Ill, were obviously present for the purpose of airing a grouch and their complaints were as frequently directed against an alleged too strict enforcement of the Food and Drugs Act as against laxity, while frequently their attacks were against supposedly reputable manufacturers rather than against the government, or against organizations such as the American Medical Association or the United States Pharmacopeial Revision Committee.

The climax was finally reached at the end of two weeks by a statement by Mr. Ambruster that he was sure he could prove his charges if the committee would secure for him access to the confidential files of the government and permit him to call certain governmental witnesses and others under subpena who, he felt sure, would give evidence fully confirming his own allegations. Meanwhile he had done his best to besmirch by innuendo and by direct charges not only the officials of the Department of Agriculture and the American Medical Association but also officials of the Public Health Service, the Department of Justice, drug manufacturers of high standing and editors of scientific and trade papers.

The net effect of all this, if taken seriously, would have been the creation of distrust in the minds of the public as to the reliability of every drug product used in cases of serious ailments, and the indictment of the government, the organized medical profession, the manufacturing drug trade and the importing drug trade as members of a huge conspiracy to undermine the public health.

REBUTTAL EVIDENCE

Not until the beginning of the third week did rebuttal evidence begin. The first to take the stand were the officials of the American Medical Association. The Secretary of the Association came as a voluntary witness to correct statements made to the committee in the week preceding which were violative of the truth. Unequivocally he denied that there was any conspiracy between the American Medical Association and the Food, Drug and Insecticide Administration, and he specifically denied the charges made by Mr. Ambruster and Dr. Rusby which involved the American Medical Association and the ethics of the medical profession. The ridiculous charge that the editor of THE JOURNAL controlled the Council on Pharmacy and Chemistry was shown to be a lie. The editor casts one vote as a member.

During the cross-examination of Dr. Olin West, an advertisement published *forty or fifty years* ago was introduced by Senator Wheeler. In this announcement Dr. Simmons was said to be an expert in the treatment of women's diseases and advertised a sanatorium. The exhibit was a photostatic copy of a newspaper advertisement and across the top was pasted a clipping from another publication, accompanying the title of the article, in which Dr. Simmons was referred to as "Editor Emeritus of THE JOURNAL A. M. A." The Secretary immediately criticized Senator Wheeler for introducing the advertisement and called it unfair. This exhibit was characteristic of the tactics of those attacking the Food and Drug Administration. The advertisement was inserted by Dr. Simmons in a local paper when he was first starting practice, long before he was in any way connected with the American Medical Association. The Secretary said that while such advertising would not be tolerated at the present time it was not infrequent in those days, and that the heading did not appear in the original advertisement and had been recently added.

The testimony of the Secretary was followed by that of the Director of the American Medical Association Chemical Laboratory, Dr. P. N. Leech. He submitted testimonials given by Dr. Rusby for "patent medicines" (referred to under section II), and spoke at length of the work of the Council on Pharmacy and Chemistry, particularly in relation to its findings on ergot preparations. Before leaving the witness stand, the Director of the Laboratory reiterated that he had seen no evidence of laxity in the enforcement of the Food and Drugs Act; that both he and the Secretary of the Association were there as voluntary witnesses and if there should be reason for criticism they would be just as ready to condemn the Department of Agriculture as they are, in this case, to commend it.

Mr. W. G. Campbell was the chief spokesman for the government. His replies to the cross-fire of questions by the committee, particularly to the obvious antagonism of Senator Wheeler, were readily responsive, concise and to the point. His replies were supported by documentary evidence, by copies of official reports, by affidavits and particularly by the testimony of scientific men of recognized ability. Dr. J. J. Durrett as chief of the drug control of the Food, Drug and Insecticide Administration presented convincing scientific evidence. It was shown not only once, but repeatedly, that Mr. Ambruster's initial interest in this whole matter was commercial; in fact, evidence presented by Mr. Campbell indicated with considerable force that an attempt had been made to corner ergot.

A letter was introduced, written by Dr. Rusby to Mr. Theodore Weicker, first vice president of E. R. Squibb & Sons, in which appear the following very significant paragraphs:

" . . . The men who are being persecuted for selling good ergot have in their possession many thousands of pounds of the best ergot available. . . . I cannot understand why you

should not play the part of a courageous and generous party in this unhappy situation. If these men have done wrong, which I personally believe to be a false accusation, resulting from commercial rivalry, they certainly have suffered enough loss and punishment to satisfy any reasonable victor, without being utterly ruined and impoverished through the destruction of all this valuable property, which our public needs. This is a fair opportunity for the exercise of noble generosity. Blessed are the peacemakers is a beatitude in which you and I both believe. If you and your associates would buy this fine ergot at the current market price, you would only benefit yourselves and the public and contribute to peace on earth and good will to men; and I, in my very unbusinesslike way (Thank God) believe that this is one of the obligations of business.

Personally I have pledged myself to see this ergot used, and I must go to any length in redeeming my pledge. . . ." [Italics ours.—ED.]

A review of the printed record at this time indicates that Mr. Ambruster expected to make a handsome return on his own importations of crude ergot apparently by creating the impression that other ergot on the market was unfit for consumption. When Ambruster found that the government was unwilling to be a party to his efforts and that the American Medical Association would not take sides in his commercial undertaking, he developed a long persisting campaign of abuse. Notwithstanding the claims made, it was shown by both the officials of the American Medical Association and those of the government that the official health records show no increase in maternal mortality which could in any wise be attributed to ergot. The evidence shows that, far from being remiss in its control of drug products, realizing that drugs like many other commodities in every day use are subject to deterioration, the government has been creating methods for manufacturing and maintaining drug products in a state of potency and purity.

While a definite report has not been made by the Senate committee as a whole, the impression created on the technical members of the committee and apparently shared by most of the nontechnical members was fairly well summarized by comments made by Senators Copeland and Hatfield in the closing days of the hearing. Senator Copeland, June 26, 1930, commenting on the principal charges which related to alleged irregularities in the control of ergot preparations, said:

"I consented to serve on this Committee, Mr. Chairman, because I am so vitally interested in the health of the people of this country and so anxious particularly to allay the fear which I think is fundamental. I am sure you, Mr. Chairman, as a physician (addressing Senator Hatfield) realize the significance of fear. If it should be impressed upon this country that there is being sold a drug product which is inferior, which is incapable of producing the desired effects, that is, in the first place, a direct menace to health and, in the next place, it is a direct menace to happiness, and it creates fear. I say that from 1910 to 1930, a period of twenty years, the death rate from puerperal hemorrhage is almost the same year by year. We had one year, you remember, a terrible epidemic in 1918. I happened to be the Commissioner of Health, as you know, at that time. At that time the deaths from all causes in maternity were higher than in any other year; and of course you realize that in the influenza epidemic the young mothers were the ones who died. The death rate of young mothers was higher by far than all the other death rates. . . . Therefore I am forced to believe that there is no foundation for the charge that the Agricultural Department or somebody else has brought about a lowered standard which is a menace to the welfare of the mothers of America or the prospective mothers."

Referring to the government enforcement officials, Senator Copeland again said:

"These men, if they are acting in good faith are, under the law, forced to accept that standard (the Pharmacopeial standard) even if it is an improper standard. You [Addressing Dr. Rusby] are better qualified than they are, or I am, or than the Chairman, if I may say so, to pass upon that subject, because of your great experience. But, Doctor, it is a terrible thing to assist in any way in the tearing down of public confidence in a department of the government. If I believed, Doctor, that these men are guilty of conspiracy, or connivance, I would stand on the floor of the Senate and detain it at this late hour and demand that there be a reorganization of that department. But I have listened here for weeks (we have been here nearly a month) and, frankly, I have not heard any testimony that was conclusive, that made me believe that these men entered into a conspiracy. . . ."

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

ANAEROBIC ANTITOXIN (See New and Nonofficial Remedies, 1930, p. 343).

Parke, Davis & Co., Detroit, Mich.

Gas-Gangrene Antitoxin (Combined) Refined and Concentrated-P. D. & Co.—An antitoxic serum prepared from the toxins of *B. perfringens (B. welchii)* and vibrion septique. Horses are immunized with the respective toxins separately. The resulting antitoxins are standardized, the unit of the perfringens antitoxin being that specified by the United States Public Health Service and that of vibrion septique antitoxin being the amount which will neutralize 100 M. L. D. of the toxin per kilogram of rabbit; the antitoxins are refined, concentrated and combined in such proportion that the quantity of the finished product in the marketed syringes contains 100 units of each antitoxin. Gas-gangrene antitoxin (combined) refined and concentrated-P. D. & Co. is proposed for therapeutic use against gas-gangrene infection caused by *B. perfringens (B. welchii)* and vibrion septique. It is marketed in syringes containing 100 units of perfringens antitoxin and 100 units of vibrion septique antitoxin.

Dosage.—The contents of one syringe, preferably by intravenous injection, repeated in from eight to twenty-four hours if necessary, especially in acute peritonitis and obstruction of the small bowel.

CHLORBUTANOL (See New and Nonofficial Remedies, 1930, p. 115).

The following dosage form has been accepted:

Inhalant Chloretone, Creosote and Eucalyptol-Sorensen: Chloretone 1.2 Gm. (20 grains); creosote 2.5 cc. (40 minims); eucalyptol 3.75 cc. (60 minims); alcohol to make 30 cc. (one fluidounce).

Prepared by C. M. Sorensen Co., Inc., Long Island City, N. Y.

PARKE, DAVIS & COMPANY'S STANDARDIZED COD LIVER OIL (See New and Nonofficial Remedies, 1930, p. 256).

The following dosage forms have been accepted:

Soluble Gelatin Capsules Parke, Davis & Company's Standardized Cod Liver Oil, 10 minims.

Soluble Gelatin Capsules Parke, Davis & Company's Standardized Cod Liver Oil, 20 minims.

Soluble Gelatin Capsules Parke, Davis & Company's Standardized Cod Liver Oil, 2.5 Gm.

Soluble Gelatin Capsules Parke, Davis & Company's Standardized Cod Liver Oil, 5 Gm.

Pages Are Missing Everywhere.—Seven thousand years are but a moment in the limitless course of time, and not much more in the history of our earth's evolution. Yet that brief period contains practically all we know of man's progress, his desires and ambitions, his struggles and accomplishments, his ever increasing mastery of the world in which he lives. Nor is the story at all complete. Pages are missing everywhere and quite often whole chapters. Yet the knowledge we possess enables us to reconstruct a fairly intelligent and orderly sequence of the facts of man's emotional and intellectual evolution.—**Elwyn, Adolph: Yourself, Inc., Brentano's, 1930.**

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 6, 1930

THE AMBRUSTER ERGOT SITUATION

Elsewhere in this issue appears a special article relative to the campaign conducted in recent years by one Howard W. Ambruster against the Food and Drug Administration of the United States Department of Agriculture and against the officials of the American Medical Association. In his campaign, Mr. Ambruster has alleged repeatedly that there exists a conspiracy between the government department and the American Medical Association to approve substandard drugs, particularly ergot. As is brought out in the special article referred to, Mr. Ambruster is in the ergot business. At one time he had and, according to current reports, he still has a considerable amount of ergot and of its preparations on his hands. The charges of Mr. Ambruster are entirely without foundation. The vast majority of the ergot on the market is dependable and there has been no increase in deaths from puerperal hemorrhage. The government department attacked seems to have been operating with exceptional efficiency.

As shown in the analysis of the matter published in this issue, a scientific body known as the American Association of Obstetricians, Gynecologists and Abdominal Surgeons injected itself into the situation through the appointment of a special investigative committee. The report of this special committee was circulated by the Ambruster cohorts before it was presented to the society. The report has not received any approval by either the executive body of the society or the society itself. The chairman of the committee is recognized as a personal friend and neighbor of Dr. Henry H. Rusby, chief supporter of Ambruster in this matter. Special attention is called to the report accredited to the American Association of Obstetricians, Gynecologists and Abdominal Surgeons in order that other special scientific societies without facilities for either scientific or other types of investigation may not be drawn into a similar snare. For many years the American Medical Association has had an independent body, the Council on Pharmacy and Chemistry, charged with the investigation of drugs and with maintaining standards of purity and honesty in their manufacture and exploitation. Even such a body, composed of specialists in many fields and equipped with laboratories and funds, finds it difficult in some instances to ascertain the exact facts. How much less can any committee without these facilities and without special knowledge attempt to prepare a report in this field? Certainly the American Association of Obstetricians, Gynecologists and Abdominal Surgeons now needs a different type of committee to investigate the manner of preparation and particularly of circulation of the report which has been accredited to it and which has already done serious harm to the good name of the organization.

Dr. Henry H. Rusby is seventy-five years old, already retired from his official teaching position. As a botanist he was recognized by the pharmaceutic profession as a leader—in pharmacy, not medicine. The record of Dr. Rusby presented in this special article would seem to be sufficient to convince any careful reader that Dr. Rusby's services have not always been altruistic.

The attacks made by Howard W. Ambruster over several years and now being conducted in correspondence to all of the members of the Committee of Revision of the U. S. Pharmacopeia and to any one else that will listen to him represent a type of pertinacity and venom and an assertion of persecution unusual in one who is trained as a chemist, whose mind should be calm and balanced in the judgment of any scientific situation. In his most recent letter to the members of the U. S. Pharmacopeial Revision Committee he concentrates his attack on Dr. E. Fullerton Cook, recently unanimously elected chairman in spite of opposition from those that have sought to break down pharmacopeial standards for the benefit of commercial interests in the field of pharmacy. There is no more warrant for the attacks made on Dr. Cook than for those made on the United States Food and Drug Administration and on the officials of the American Medical Association.

It is a pity that scientific workers should be compelled to pause in their pursuits to evade the buzzing and pestering of the musca Ambruster. It is sad that such persistence and intensity of purpose as he has displayed should not have been placed on some more justifiable cause. It is unfortunate that a government bureau endeavoring not only to maintain high standards but, indeed, to raise them should be compelled to spend weeks of preparation for a Senate hearing and weeks of time in the hearing because of publicity given to the wailing of a commercial interest caught long in a medical market.

Up to now THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has largely ignored in its pages the nuisance of Mr. Ambruster. It will continue to devote little of its interest or space in the future to unfounded charges, to insinuations without evidence, to the calling of names, or to cacoethes scribendi on the part of any commercial assailant.

EPHEDRINE AND HABIT FORMATION

In a recent article in the *Ladies Home Journal,* Mr. Reginald Wright Kauffman is authority for the statement that ma huang is closely related to coca and that it is as dangerous as the narcotics of the coca group. Mention of ma huang, the potent principle of which is ephedrine, is incidental to a popular discussion of the world narcotic situation. The article states: "Ma huang . . . has cocaine's effects—it is exhilarating, habit-forming, deadly." From its phraseology, the source of the statement would appear to be one Alfredo E. Blanco, described as a "leading narcotic expert" of the League of Nations and quoted in the New York *Herald Tribune* of June 24, 1928, as saying: "The stuff [ephedrine] . . . is just as exhilarating [as cocaine] at first, just as habit forming a little later and just as deadly at last." Mr. Blanco is not listed in Minerva; Mr. Kauffman is a novelist and magazine writer. In an article "Ephedra, Ephedrine and Cocaine," published in the *Druggists Circular* for December, 1927, p. 1186, H. H. Rusby (also quoted in the newspaper article referred to), after speaking of the habit-forming properties of cocaine, predicts that "there is a possibility of our seeing history repeated in the case of ephedrine, for the effects of these drugs, while quite different in some ways, exhibit striking similarities in others."

Chen and Schmidt in their recent exhaustive monograph, "Ephedrine and Related Substances," make the following statement: "Investigators seem to agree that the prolonged use of ephedrine does not have any cumulative harmful effects and does not result in habit formation. Middleton and Chen reported a case that received a total quantity of 10 grams of ephedrine sulphate in a period of eleven days but showed no detectable pathologic changes. Withdrawal did not give that patient any discomfort or any craving for the drug. Wu and Read mentioned a case in which ephedrine therapy (40 to 60 mg. every one to three days) was continued for three years. Laboratory examination did not show any ill effects. Thomas and Balyeat, and Collina also express the opinion that ephedrine is not a habit forming drug." In the statement of actions and uses of ephedrine published by the Council on Pharmacy and Chemistry in New and Nonofficial Remedies there is no reference to habit-forming properties of the drug. A search of the *Quarterly Cumulative Index Medicus* of the American Medical Association fails to reveal published articles on ephedrine as a habit-forming drug.

The positive statements of Blanco and the predictions of Rusby do not appear to be borne out by the critical, scientific reports of Chen, Schmidt, Read and others. Though it is known that the actions of ephedrine on the central nervous system resemble considerably those of cocaine, it is not believed that these are sufficiently pleasant to be a temptation; certainly the effects cannot be at all serious, or they would have become apparent before this.

Experiments reported by M. H. Seevers [1] indicate that in animals already addicted to cocaine the substitution of ephedrine produces an initial condition which cannot be distinguished from that of cocaine, though over a period of time the response to ephedrine tends to diminish rather than increase—a different picture from that seen if cocaine is continued.

Though several cases have come to Dr. Seevers' attention of human individuals who, after prolonged use of ephedrine against asthma, reported that it produces euphoria, he also has received reports of patients who had to discontinue the drug on account of unpleasant stimulation.

The absence of clinical reports of addiction certainly does not substantiate the careless references of the popular writers that have been mentioned. Persons who have used the drug do not appear to have undergone any mental or moral deterioration or any withdrawal symptoms or other difficulty in stopping the use of the drug; the available evidence, therefore, indicates that there is little if any danger of ephedrine becoming a serious habit former.

CARDIAC PAIN

To the physician, the phenomena of pain are of fundamental importance in the study of disease. As Sir James Mackenzie [2] wrote many years ago, not only is pain the most important of complaints, but it is the most instructive diagnostic sign, for the study of its mechanism gives often the key to the best means for attaining relief. Pain is a disagreeable sensation due to stimulation of some portion of the cerebrospinal nervous system and usually referred to the peripheral distribution of cerebrospinal sensory nerves in the external body wall.

One of the most tantalizing types of pain is that commonly referred to as angina pectoris, or breast pang. It has been attributed to malnutrition of the heart which may result from arterial spasm or occlusion, muscular cramp caused by overstimulation, and such muscular exhaustion as might follow degeneration of the cardiac muscle. In a review of the etiology, Brooks [3] has remarked that since the diversity of the theories is proof of insufficient knowledge it is wiser for the practitioner to consider the syndrome the result of definite cardiac lesions.

There are many difficulties in the way of a purely experimental study of angina. In animals it is not always easy to determine the existence of pain; and when anesthesia is employed in requisite operative

1. Seevers, M. H.: J. Pharmacol. & Exper. Therap. **39**: 251 (July) 1930.
2. Mackenzie, James: Symptoms and Their Interpretation, ed. 2, New York, Paul B. Hoeber, Inc., 1913.
3. Brooks, Harlow: Angina Pectoris, in Cecil's Textbook of Medicine, Philadelphia, W. B. Saunders Company, 1927, p. 1064.

procedures the difficulty is augmented. In an elaborate study of the subject, Sutton and Lueth [4] of Chicago succeeded in animals in passing a ligature through a small incision in the parietal pericardium around the ramus descendens anterior sinister branch of the left coronary artery. By this means the coronary vessel could be more or less completely occluded without otherwise altering the cardiac structures. In this way it has been definitely shown that temporary partial or complete interference with blood flow in a coronary artery or vein invariably produces pain. The moment the lumen of the artery is narrowed there is distinct evidence of pain, shown by restlessness of the animal. This pain ceases immediately on the return of the artery to its normal size. Increasing narrowing of the arterial lumen produces increasingly severe pain, until total occlusion produces apparently severe pain. This disappears immediately on the release of occlusion. On the other hand, the pain produced by compression of the artery and vein is not produced by compression of the muscle and visceral pericardium included in the ligature. This is definitely shown by the failure to produce pain by ligatures passed so as to compress only muscle and visceral pericardium. Even the tearing of the muscle and visceral pericardium when the ligature is pulled until it cuts entirely through both fails to produce pain. Other symptoms analogous to those occurring in man in angina pectoris and coronary occlusion can be produced experimentally in the dog; namely, sometimes nausea and vomiting, stimulation of respiration and fall in blood pressure. Salivation, which is accepted as evidence of nausea in the dog, has been observed repeatedly during the periods of compression. Respiration becomes increased in rate and volume as the pain increases, finally becoming violent and irregular. A symptomatic dyspnea is the first evidence of compression and may be the only evidence of moderate occlusion.

According to these investigations, it appears that the pain fibers involved in experimental occlusion of the coronary artery are the nerve fibers that are found in the adventitia of the coronary artery or in the immediate surrounding tissues. The cutting of this pathway prevents the transmission of pain, which appears to be produced in the temporarily infarcted area of the heart muscle. As acute mechanical distention of the aortic arch, ascending aorta, aortic ring and the cavity of the left ventricle does not produce pain, Sutton and Lueth conclude that the only mechanism for the production of cardiac pain is that of lessened blood flow to the myocardium. In other words, they indicate that cardiac pain is the result of insufficient nutrition to the heart muscle. This being true, it is readily conceivable that the anatomically normal heart may, under conditions of extreme exertion, fail to receive sufficient blood (nutrition) through normal coronary arteries. In fact, this is suggested, they add, in the sensations of athletes just before getting their "second wind." These sensations are choking sensations, substernal oppression or actual precordial or substernal pain.

The fact that the heart, like other viscera, is insensitive when stimulated in a manner that provokes pain when applied to the tissues of the external body wall has long been recognized. William Harvey, the discoverer of the circulation of the blood, exhibited to Charles I a young nobleman who, following a fracture of the ribs, had a large abscess which opened, leaving a large gaping wound on the left side. It was possible without detriment to the patient, Harvey reported, to "observe the movement of the heart, and, with his proper hand even touch the ventricles as they contracted. And His Most Excellent Majesty, as well as myself, acknowledged that the heart was without the sense of touch; for the youth never knew when we touched his heart, except by the sight or the sensation he had through the external integument." In the words of Sutton and Lueth, this is truly a royal experiment.

4. Sutton, D. C., and Lueth, H. C.: Pain, Arch. Int. Med. **45**: 827 (June) 1930.

THE BLOOD CALCIUM IN JAUNDICE

The abnormal tendency to bleeding that occurs when blood vessels or capillaries are severed in jaundiced persons is familiar to every clinician. Efforts to correct the delay in coagulation have been concerned primarily with the theoretical factors. The question at once arises: "What is the abnormal feature in the composition of the blood in icterus that interferes with the usual orderly sequence of clotting when the blood leaves the circulation?" The most commonly accepted answers postulate a deficiency in calcium, one of the elements demonstrated to be fundamentally involved in the formation of fibrin in shed blood. During jaundice, bile pigments circulate in undue amounts. They are known to form compounds with calcium; indeed, bile pigments usually are present as calcium salts in gallstones.

Accordingly, it has been asserted that the bile pigments circulating in the blood in obstructive jaundice gradually absorb the calcium of the organs and tissues to form calcium compounds which diminish the amount of available calcium in the tissues. It has been assumed, further, that some of the calcium is bound to the blood proteins, and in jaundice disturbances in the protein balance might affect the degree of diffusibility of the serum calcium. According to this assumption, the diffusible calcium should decrease and the nondiffusible calcium, in turn, increase by becoming bound to protein. Again, it has been asserted that the pigment becomes fixed to the plasma proteins to some extent, lessening the diffusibility of the pigment molecule and preventing its excretion. The protein pigment combination uniting with calcium then increases the ratio of protein-bound to free calcium, altering the normal diffusibility and

ionic relations. According to this assumption, when the degree of icterus becomes high, the pigment protein combination uniting with the diffusible calcium should decrease this form of the serum calcium and proportionately increase the nondiffusible form.

Analytic data relating to the composition of the blood have been advanced to support these intriguing hypotheses. They have at length been subjected to critical review and reexamination by Gunther and Greenberg [1] of the University of California Medical School. Studies of the blood of jaundiced patients show that there is no deficiency in the diffusible calcium of the blood serum, regardless of the degree of jaundice between icteric indexes of 17.5 to 200, and regardless of the absence or presence of abnormal bleeding phenomena. The serum albumin may be low in jaundice. The nondiffusible fraction of the serum calcium may be low as a result of the fall in the serum albumin. The observations thus fail to reveal sufficient evidence on which to base the conclusion that there exists in the blood of jaundiced patients a deficiency of available calcium, nor is there direct experimental or analytic proof of the existence of a deficiency in the diffusible calcium of the serum. Hence, as Gunther and Greenberg conclude, factors other than the amount of available calcium, as measured by the concentration of the diffusible calcium, must be sought to explain the abnormal bleeding phenomena seen in jaundiced patients.

1. Gunther, Lewis; and Greenberg, D. M.: The Diffusible Calcium and the Proteins of the Blood Serum in Jaundice, Arch. Int. Med. 45: 983 (June) 1930.

Current Comment

THE BRITISH MEDICAL ASSOCIATION IN CANADA

The annual session of the British Medical Association just completed in Winnipeg, Canada, was an adjourned session from a meeting held in Great Britain some months ago. At the earlier meeting the representative body concluded its deliberations. The adjourned meeting in this country was planned for the holding of the scientific sessions and for all the pageantry and entertainment features of the regular meeting. Beginning with the opening session, which included the installation of the president, the president's address, and the introduction of official representatives, proceeding with the official religious session, the president's reception and the great banquet, the meetings were impressive, instructive, indeed magnificent. Well nigh a century has passed since the founding of the British Medical Association in 1832. The very age of the organization and the traditions of British custom lend to its functions color and a distinctiveness unusual in medical affairs. Hundreds of Americans attended the meetings and took part in the scientific deliberations. Again and again the unity of the English speaking nations was emphasized and the international character of medicine given prominence. During the coming weeks many of our British colleagues will be touring the United States, and it is anticipated that American physicians will give to them the hospitality and the welcome for which American medicine is known throughout the world.

SERODIAGNOSTIC HAZARD

It is a traditional assumption that the specific "antibody" titer of a patient's serum is a reliable measure of the patient's specific immunity. A strongly positive Widal reaction thus becomes a logical basis for favorable prognosis. A subnormal opsonic index logically suggests the necessity for a therapeutic vaccine, the whole vaccine therapy of Wright being based on this assumption. This traditional logic has been challenged by recent theorists, who emphasize the fact that there is as yet no proof of the historic assumption that all test tube "antibodies" are defensive hormones.[1] Convincing evidence of their postulated lack of parallelism between immunity and test tube titer is currently reported by Dr. E. G. Stillman [2] of the Rockefeller Institute Hospital, New York. Stillman studied humoral antibodies in four groups of rabbits injected intravenously, intraperitoneally, intramuscularly and subcutaneously with the same doses of heat-killed pneumococci. Comparison was made between specific test tube agglutinins and specific protective antibodies for mice. Almost all the rabbits injected intravenously or intraperitoneally developed both specific agglutinins and specific protective antibodies. Following intramuscular injection, however, only one rabbit in four developed agglutinins, while 90 per cent of them gave protective antibodies. In his subcutaneous group even more marked discrepancies were noted, no agglutinins whatever being formed, though adequate protective antibodies were demonstrable in more than 70 per cent of the cases. Stillman concludes that test tube agglutinins (or agglutinating functions) and therapeutic antibodies (or protective functions) may coexist in the same immune serum but that "their amounts do not necessarily vary together, nor are both always found." Too little is known of the biochemical complexity of the pneumococcus and its possible denaturizations in subcutaneous tissues to warrant a guess as to why intravenous injection is followed by the humoral liberation or synthesis of specific agglutinins while subcutaneous injection leads only to the formation of nonagglutinating serologic changes. Stillman's alleged lack of parallelism between test tube titer and therapeutic function, however, emphasizes the current hazard of test tube diagnosis and test tube prognosis in specific infectious diseases. The observed variation in antibody response with different sites of injection is equally suggestive of a current gamble in therapeutic immunization and "desensitization."

1. Jordan, E. O., and Falk, I. S.: The Newer Knowledge of Bacteriology and Immunology, University of Chicago Press, 1928, chapter 81, p. 1078.
2. Stillman, E. G.: The Effect of the Route of Immunization on the Immunity Response to Pneumococcus Type I, J. Exper. Med. 51: 721 (May) 1930.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday, Tuesday and Saturday, and at 9:45 on Thursday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

September 8. The Doubting Folly.
September 9. The Prevention of Death from Cancer.
September 11. Hay! Hay!
September 13. Revising Our Attitudes Toward Child Labor.

Five Minute Health Talks may be heard over the Columbia Broadcasting System daily from 1 to 1:05 p. m., daylight saving time.

The program for the week is as follows:

September 8. Wash Your Hands.
September 9. How's Your Voice?
September 10. Expanding Health Horizons.
September 11. Gaining the Child's Confidence.
September 12. Foraging in the Field of Food Faddists.
September 13. The Stock Market.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Society News.—The Craighead-Poinsett Counties Medical Society was addressed, July 24, at Cash by Dr. Allen G. Scott, Jonesboro, on "Foreign Bodies in the Throat."——The Mississippi County Medical Society was addressed at Blytheville, July 8, by Drs. Peter Whitman Rowland, Jr., Memphis, Tenn., on diabetes mellitus, and Joseph A. Crisler, Sr., Memphis, Tenn., "Ovarian Cysts with Reference to Their Malignancy."

CALIFORNIA

Personal.—The following changes among health officers have been announced: Drs. Harold G. Gentry to succeed Kenneth L. Dole as city health officer of Redlands; John H. Hansen as city health officer of Ukiah; Warren F. Fox to succeed Harold V. Gray as health officer of Imperial County, and Samuel Iglick to succeed F. M. Lawson as health officer of Glenn County.

Mussel and Clam Quarantine.—The state department of public health, July 11, established a quarantine on mussels that might be gathered along the coast of San Mateo County. Quarantine was established, July 16, on clams also and the territory quarantined was extended from Monterey County to Del Norte County exclusive of the San Francisco Bay shore. The public has been warned of the danger of eating mussels at this season. No cases of poisoning from mussels or clams have occurred in California this year. No commercially packed shellfish have been involved so far. All cases that have occurred in California during the past years have been persons who ate shellfish which were gathered on beach parties.

Gifts to University of California.—Among the gifts for research and scholarships announced by the regents of the University of California at their recent meeting were $1,500 with a check for the first $600 from the Ciba Company, Inc., of New York, for the Ciba Fellowship in Pharmacology; $375 from Eli Lilly and Company for a fellowship in the Pacific Institute of Tropical Medicine, and $1,000 with a check for the first $250 from the National Research Council for study of the effect of roentgen rays on the ovaries and uterine tissue of rats and the relation of the pituitary gland to the ovaries in rats. Samuel S. Maxwell, Ph.D., professor emeritus of physiology, donated 2,500 reprints comprising a complete set of the papers of the late Dr. Jacques Loeb.

Society News.—The San Diego Medical Women's Club was addressed, August 6, by Dr. Rita V. Sapiro Finkler, Newark, N. J., on recent advances in endocrinology.——The Alameda County Medical Association was addressed, August 18, by Drs. Jacob C. Geiger, San Francisco, on "The Public Health Aspect of Undulant Fever"; Wilfred H. Kellogg, San Francisco, "The Practice of Preventive Medicine," and Fred M. Loomis, Oakland, "Public Health in Soviet Russia."——The San Francisco County Medical Society will be addressed, September 16, by Dr. Francis Scott Smyth on "Biochemistry of Intestinal Obstruction," and Dr. Sterling Bunnell, treatment of fractures.

DELAWARE

Society News.—The August *Delaware State Medical Journal* was devoted to papers by the staff of the state board of health. The special state board of health number will be an annual feature. Among the papers presented were "Delaware's Population," by Dr. Arthur C. Jost, Dover; "Suggestions from a Laboratory Director," R. D. Herdman, B.S., Dover; "Endemic Typhus Fever (Brill's Disease)," Dr. Ernest F. Smith, Georgetown, and "Some Preventable Causes of Death Among Infants and Children," Dr. Clealand A. Sargent, Dover.

GEORGIA

Personal.—Dr. Marvin F. Haygood has been appointed superintendent of the State Tuberculosis Sanatorium at Alto, it is reported, to succeed Dr. Edson W. Glidden II. Dr. Haygood was formerly city physician of Knoxville, Tenn., and has been engaged in work in the Georgia Department of Health.

Society News.—The Fulton County Medical Society was addressed, August 21, by Drs. Frank Lee Bivings and Thomas C. Davison on "Value of Natural Color Photography and Microphotography in Medicine" and "Intrathoracic Tumors," respectively; Dr. Abner W. Calhoun reported on two cases of paroxysmal auricular tachycardia.——The Tenth District Medical Society was addressed at Louisville, August 28, by Drs. Samuel C. Ketchin, Louisville, on malaria; Robert L. Rhodes, Augusta, cancer, and Everard A. Wilcox, Augusta, surgery. Drs. Cyrus W. Strickler, Atlanta, Irvine Phinizy and Frank Lansing Lee, Augusta, spoke on the pneumonias. ——Special conferences on malaria were held by the Washington County Medical Society, August 6, at Sandersville, and the Burke County Medical Society, July 3, at Midville.

INDIANA

Conference for Uniform Quarantine Regulations.—The state health commissioners of Michigan, Ohio and Indiana met, July 14-15, at Pokagon State Park, Lake James, to discuss uniform quarantine regulations. It was shown that because of differences in regulations governing quarantine for the various communicable diseases in the adjacent states of Michigan, Ohio and Indiana there has always existed confusion in counties and cities bordering on the state lines. In order to eliminate these difficulties, the health officers agreed on practically uniform regulations and requirements for quarantine, for release from quarantine and for the control of contacts and carriers. It was announced that these agreements will become official in each of the three states within a short time.

State Medical Meeting at Fort Wayne, September 24-26.—The eighty-first annual session of the Indiana State Medical Association will be held at Fort Wayne, September 24-26, with headquarters at the Hotel Anthony and under the presidency of Dr. Angus C. McDonald, Warsaw. The program includes papers by Drs. Henry O. Mertz, Indianapolis, on "The Lateral Pyelogram"; Walter R. Parker, Detroit, "Eye Conditions in Children of Interest to the General Practitioner"; Harry W. Garton, Fort Wayne, "Compensable Hernia"; Cleon A. Nafe, Indianapolis, "Injection Treatment of Varicose Veins"; Walter H. Baker, South Bend, "Tumors of the Colon"; Arett C. Arnett, Lafayette, "Some Surgical Complications"; Eugene B. Mumford, Indianapolis, "Joint Surgery"; Robert A. Milliken, Indianapolis, "End-Results of Bone Tuberculosis"; Carl B. Sputh, Indianapolis, "Zinc Ionization in Treatment of Sinusitis"; Edward A. Pape, Indianapolis, "Treatment of Cataract Cases by Lens Extract"; Frank J. Spilman, Connersville, "Why Dentists and Otolaryngologists Should Become Better Acquainted"; Charles J. Adams, Kokomo, "Practical Refraction"; Harry A. Van Osdol, Indianapolis, "Systemic Effect of Nasal Hyperplasis as It Affects the Nasal Ganglion"; Roscoe H. Beeson, Muncie, "State Medicine"; Fred W. Rankin and Jacob A. Bargen, Rochester, Minn., "Diseases of the Colon"; Isador J. Raphael, Evansville, "Practical Points on Infant Feeding"; M. Edward Davis, Chicago, "The Forceps Operation," and James B. Herrick, Chicago, "Importance of the History and Physical Examination in Diagnosis." The entertainment will include a theater party, luncheons, a golf tournament at the Fort Wayne Country Club, and automobile drives.

Dr. Arthur J. Cramp, director, Bureau of Investigation, American Medical Association, will address a public meeting Thursday on "Patent Medicine and the Public Health."

KENTUCKY

Society News. — The Calloway-Fulton-Hickman-Graves Counties Medical Association met at the Murray State Teachers' College, July 31; the program was given by Drs. Ben B. Keys on "Causes and Statistics of Heart Disease," and Edward B. Houston, Murray, "Treatment of Diseases of the Heart."——The Scott County Medical Society was recently addressed by Dr. Lee C. Redmon, Lexington, on eclampsia.——The Perry County Medical Society was addressed at Hazard, August 7, by Dr. George B. Wheeler on "Infection in Connection with Diseases."——The Green River Valley Public Health Association was addressed, August 27, at Greenville, by Drs. William A. Jenkins, Louisville, on typhoid fever, and Jethro Hancock, Louisville, on venereal diseases.

LOUISIANA

Outbreak of Infantile Paralysis.—There are said to be twenty-three cases of infantile paralysis in Shreveport and ten in the parish. The Shreveport Medical Society has recommended means of preventing the spread of the disease.

MARYLAND

New Army Hospital at Fort Meade.—The new station hospital at Fort George G. Meade, Md., opened in June, in time to accommodate patients from the regular army, national guard, organized reserve corps, citizens training camp and reserve officers training corps units which were there for summer field work. The hospital, which cost $243,233, and accommodates 100 patients, is of the colonial type of reenforced concrete and brick harmonizing with the other new buildings at Fort Meade. It has private rooms, operating room, a roentgen and pathologic laboratory, a dental department, and a dormitory for enlisted attendants. The staff and other details include four physicians, one dentist, four nurses and forty enlisted men, all members of the army medical department. Lieut. Col. Howard H. Baily is the surgeon.

NEW YORK

Cancer in New York.—The annual statistical reports of the state department of health show that the increase in deaths from cancer in 1928 was the smallest in ten years. The population of the state is estimated at nearly twelve million, of whom more than six million are in New York City. The death rate from cancer in 1928 in the state was 126.7 per hundred thousand of population. The total deaths were 14,709.

A Sampson Lecture Canceled.—Recently a man passing under the name of Paul O. Sampson appeared in Albany and gave talks before service clubs. One engagement was canceled when the club was appraised of statements in THE JOURNAL, July 12, p. 144. The lecture given by Sampson appears to have been of the usual food faddist variety. He claimed to represent the Fruit and Vegetable Growers' Association; also that heart disease can be avoided by eating the right kind of food.

Provisions Against Tularemia.—In accordance with an amendment to the sanitary code which provides for the reporting of tularemia as a communicable disease, the state department of health has issued a warning to the public to avoid the wood tick which has been abundant in the Eastern states this season. It is suspected of transmitting tularemia. Suggestions made include the elimination of some wild animals from areas frequented by people in order to reduce the number of ticks; clearing out underbrush to reduce the number of wild animal hosts; removal of ticks from dogs and other animals, and protection against the wood tick by wearing high top shoes and the disinfection of tick bites.

Study of Saratoga Springs Mineral Waters.—Governor Roosevelt appointed the following members of the Saratoga Springs commission for the development of the state reservation in that city as a health resort: George F. Peabody, Saratoga Springs, chairman; Dr. Linsly R. Williams. New York; P. B. Noyes, Oneida; Henry Morgenthau, New York; Dr. Lemuel Whittington Gorham, Albany; J. D. Barnum, Syracuse, and Dr. Carl R. Comstock, Saratoga Springs. The commission will take over the present functions of the conservation department relating to the reservation and will make a seven year study of the springs after which time the conservation department will resume control. An appropriation of $1,000,000 was granted to cover the expense of developing the reservation as a health resort and spa for balneologic and other similar purposes. The commission is empowered to build an administration building which will contain laboratories for diagnostic research and for systematic technical inquiry into the nature of mineral waters. The commission will appoint a scientific director.

NORTH CAROLINA

Society News.—The third quarterly meeting of the Raleigh Academy of Medicine, August 2, was addressed by Dr. Chevalier Jackson, Philadelphia, on "Carelessness in the Home," illustrated.——Dr. James Buren Sidbury, Wilmington, addressed the Guilford County Medical Society, August 7, on "Uses and Abuses of Viosterol."

OREGON

State Medical Meeting at Portland, September 18-20.—The fifty-sixth annual meeting of the Oregon State Medical Society will be held at Portland, September 18-20, in the society's new headquarters in the Medical Dental Building. Drs. Wesley E. Gatewood, Portland, will speak on "Abdominal Symptoms of Radiculitis"; Egon V. Ullmann, Corvallis, "Etiology of Myringitis Bullosa"; Albert L. Mathieu, Portland, "The Aschheim-Zondek Pregnancy Test"; Charles D. Donahue, Eugene, "Congenital Obstruction of the Posterior Urethra in Children"; Moses E. Steinberg, Portland, "Errors Committed in Surgery of the Stomach"; Noble Wiley Jones and Samuel J. Newsom, Portland, "Experimental Focal Infection in Relation to Cardiac Pathology"; Grant S. Beardsley, Eugene, "Morphine-Scopolamine or Pantopon-Scopolamine in Labor"; William W. Baum, Salem, "A New Apparatus for Sinus Roentgenography"; Banner R. Brooke, Portland, "Nonsurgical Treatment of Piles"; Helen G. Dennis, Portland, "Nutritional Allergy in Children"; Frank R. Menne, James Marr Bisaillon and Thomas Robertson, Portland, "Primary Bronchogenic Carcinoma, a Clinical and Pathologic Study"; Harry Watkins and John Earl Else, "Statistical Study of Cancer in Oregon"; Winfred H. Bueermann, Portland, "Study of the Clinical and Pathologic Criteria Differentiating Ulcerating Carcinoma of the Stomach from Carcinoma on Ulcer and Chronic Gastric Ulcer"; Karl H. Martzloff, Portland, "Study of Wound Healing Following the Employment of Various Suture Methods in Gastro-Intestinal Anastomosis"; Paul G. Flothow, Seattle, "Surgery of the Sympathetic Nervous System"; Clarence W. Brunkow, Portland, "Troublesome Problems in Cleft Lip and Cleft Palate Surgery," and Warren C. Hunter and John C. Adams, Portland, "Uterine Adenomyoma: A Clinical and Pathology Study," and George E. Burget, Ph.D., Portland, "Recent Contributions to the Study of Intestinal Obstruction." The fourth annual medical golf tournament will be held at Waverly Country Club and the permanent trophy will be up again for competition. Preceding the state meeting, on September 16-17 the annual conference of county health officers will be held; it will deal with preventive medicine.

PENNSYLVANIA

Society News.—The annual meeting of the Second Councilor District Medical Society will be addressed, September 11, at Washington Inn, Valley Forge, by Drs. J. Newton Hunsberger, Norristown, on "History of the Montgomery County Medical Society," and Joseph Colt Bloodgood, Baltimore, on "Value of Preventive Medicine in the Protection Against Cancer."

Philadelphia

Diphtheria Hospital Unnecessary.—For the first time in the history of the department of public health, not a new case or death from diphtheria was reported during the week of August 16-23. In corresponding weeks in August from 1921 to 1929 there were from eleven to fifty-one cases. So efficient has been the campaign against the disease that the special diphtheria hospital operated by the city has been found no longer necessary.

SOUTH CAROLINA

Society News.—The Greenville County Medical Society was addressed, June 2, by Drs. Thomas R. W. Wilson on "Observations in Laboratory Work in Relation to Diagnosis," and Humphrey D. Wolfe, "Interesting Cases Recently Diagnosed by the X-Ray"; the society was addressed, July 2, by Drs. Richard M. Pollitzer on "Pitfalls in Pediatric Diagnosis," and John F. Simmons, infant feeding.——The Columbia Medical Society was addressed, June 9, by Dr. Louis A. Buie, Rochester, Minn., on "Diseases of the Rectum," and on June 30 by Dr. Edward Mellanby, Sheffield, England, on "Nutrition in Relation to Diseases."——A symposium on gallbladder disease was presented before the Spartanburg County Medical Society, June 23, with addresses by Drs. Freeman H. Sanders, Spartanburg, James Frederick Crow, Jr., and Thomas A. Pitts, Jr.,

Columbia.——The South Carolina Tuberculosis Association in cooperation with the state board of health announces that clinics were given at the State Park Sanatorium, July 30-31, for South Carolina physicians. The course was conducted by Drs. Paul H. Ringer, Asheville, and Horton R. Casparis, Nashville, Tenn.——The Anderson County Medical Society was addressed, July 9, at Anderson by Edwin O. Hentz on "The Heart in Pregnancy."

SOUTH DAKOTA

Society News.—Dr. Anatole Kolodny, Sioux City, addressed the Sioux Falls District Medical Society, June 10, on "Surgical Treat of Irretractable Pain."——The Third District Medical Society was recently addressed at Lake Madison by Drs. Robert S. Westaby and Charles C. Hoagland, Madison, on "United Fractures of the Tibia" and "Postgraduate Medical Clinics in Europe," respectively.

TENNESSEE

Society News.—The Four County Medical Society was addressed at Rock Island, July 24, by Drs. John D. Capps, Livingston, on colitis, and Elbert L. Mooneyham, Rock Island, chronic arthritis.——The Bedford County Medical Society was addressed by Dr. John K. Freeman, Bellbuckle, on "Incipient Pulmonary Tuberculosis."——Programs given before the Hamilton County Society recently were as follows: July 17, a symposium on public health activities; July 24, "Extrasystoles," by Drs. Charles E. Homan, Jr., Chattanooga; July 31, "Choice of Anesthetics," John A. Moffitt, and August 7, "Sinus X-Rays," Eli M. DeLay.——The Knox County Medical Society was addressed at a recent meeting by Claude Wood, D.D.S., on "Preventive Orthodontia"; the society was addressed, July 22, by Dr. M. S. Roberts, Knoxville, "Treatment of Complicated Appendicitis," and July 29, by Dr. Robert G. Ashley, "Deviated Septum."——The Tri-County Medical Society was addressed at Athens, August 21, by Drs. William E. Foree on "The Acute Abdomen"; James Avery Leeper, Lenoir City, "Determination of Pathogenic Tonsil"; Prentiss E. Parker, Sweetwater, "Cesarean Section," and Herbert Acuff, Knoxville, "Carcinoma and Allied Conditions of the Uterus."

VIRGINIA

Society News.—The Medical Society of Northern Virginia was addressed, August 12, at Front Royal, by Drs. Henry Grant Preston, Harrisonburg, on "Avertin Anesthesia"; Charles E. Conrad, Harrisonburg, "Diagnosis and Treatment of Pylorospasm and Congenital Hypertrophic Stenosis"; Herman I. Pifer, Winchester, "Postoperative Abdominal Adhesions," and Lewis T. Stoneburner, Jr., and Edward L. Flanagan, Richmond, "Early Diagnosis of Pulmonary Tuberculosis."

GENERAL

Automobiles Kill 218,000 in Thirteen Years.—The number of deaths from automobile traffic in 1929 was the highest in thirteen years, according to a recent report of the American Motorists Association. The total of 124.7 persons killed by each hundred thousand registered automobiles marks the new high record. When computed by a ratio of deaths due to the number of automobiles in use, the fatalities have increased from 9,097 in 1917 to 33,060 in 1929. The total killed by automobiles during thirteen years was 218,373. The ratio of the number of deaths to the population likewise shows an alarming increase out of every hundred thousand persons living during the twelve months ended June 15, 1929; the death ratio from automobile accidents per hundred thousand of population was 23.7, or an increase of 12 per cent in the rate in a single year.

Society News.—The annual American Catholic Hospital Association of the United States and Canada met, September 2-5, at the Catholic University, Washington, D. C. Among the speakers were Surg. Gen. Hugh S. Cumming, U. S. Public Health Service, "The Hospital as a Factor in Public Health"; Drs. Louis D. Moorhead, Chicago, "Approval of Hospitals for Internships"; H. von W. Schulte, Omaha, "Approval of Hospitals for Residencies," and Fred C. Zapffe, Chicago, "Rules for Interns and Their Administration."——The Mississippi Valley Conference on Tuberculosis and the Mississippi Valley Sanatorium Association will hold their regular annual meeting at the Hotel Faust, Rockford, Ill., October 14-16. Dr. Robinson Bosworth, Box 1005, Rockford, Ill., is the secretary.——At the recent meeting of the American Association for the Study of Goiter at Seattle, Dr. William F. Rienhoff, Jr., Baltimore, received the annual award of $300 for the best essay dealing with the goiter problem. Honorable mention was given Drs. Oliver P. Kimball, Cleveland, and Ernest P. McCullagh, Cleveland, Robert P. Ball, Louisville, and D. R. McCullagh, Ph.D.——The thirty-fifth annual session of the National Medical Association was held, August 18-22, at Indianapolis. The chairman of the surgical section, Dr. Charles Waymond Reeves, Atlanta, spoke on "Contributions of the Negro to Medical Sciences." The public health meeting was addressed by Drs. Algernon B. Jackson, Washington, D. C., on "Childhood Types of Tuberculosis," and Henry M. Green, Knoxville, on "The Hospital Situation as It Concerns Us Today." Dr. Charles V. Roman, Nashville, gave the "Ex-President's Oration in Medicine." The officers for the ensuing year are as follows: President, Dr. William H. Higgins, Providence, R. I.; president-elect, Dr. Peter M. Murray, New York, and general secretary, Dr. Walter G. Alexander, Orange, N. J. The next annual session will be held in Atlanta, Ga.——The Cincinnati meeting of the American Chemical Society will be held, September 8-12. The divisions of biologic and medicinal chemistry will be addressed, among others, by Frank A. Hartman, Ph.D., on "Cortin, the Vital Hormone of the Adrenal Cortex"; Charles H. Herty, Ph.D., "The National Institute of Health"; Ward V. Evans, Ph.D., and H. C. Benedict, "The Physical Chemistry of Local Anesthesia"; Emil J. Baumann, Ph.D., and Dr. David Marine, "The Possible Nature of the Goiter-Preventing Agent in Plants," and E. Fullerton Cook, Ph.M., "The Relation of Medicinal Chemistry to the United States Pharmacopeia."——The eleventh annual meeting of the American Student Health Association will be held in New York at the Hotel Astor, December 29-30. Dr. Dean F. Smiley, Ithaca, N. Y., is the secretary.

FOREIGN

Dr. Harris Receives Alvarenga Prize.—Dr. H. A. Harris, assistant professor of anatomy, University College, and assistant to the medical unit, University College Hospital, London, was awarded the Alvarenga Prize of the College of Physicians of Philadelphia for an essay entitled "Cod Liver Oil and the Vitamins in Relation to Bone Growth and Rickets."

Rockefeller's Gift to the University of Sydney.—The senate of the University of Sydney has announced that the Rockefeller Foundation has decided to contribute £100,000 to provide laboratory facilities for the departments of medicine, surgery, pathology and bacteriology. The medical school of the university was brought within the scope of the foundation on account of the recent establishment of Bosch chairs in medicine, surgery and bacteriology. It is the intention of the university to build a new block close to the Royal Prince Alfred Hospital to house departments which have already been endowed and also the departments of medicine, surgery, pathology and bacteriology. The present medical school will continue to house the departments of anatomy, physiology, pharmacy and dentistry. An account of the new school of tropical medicine at Sydney appears in THE JOURNAL, July 5, p. 56.

League of Nation's Program for China.—The report of investigations in 1929 of maritime quarantine in China made by members of the Chinese Health Service in cooperation with the League of Nations has been accepted. The League of Nations was represented in the field by Drs. Ludwig Rajchman, director, and Frank Boudreau, senior member. Two outstanding measures were proposed for effecting the modernization of Chinese medical health services. They were (1) collaboration between the Health Section of the League and Chinese Ministry of Health in the solution of health problems in China, and (2) close harmony in the reorganization of quarantine service in China ports. Among other matters agreed on were the immediate establishment of a national hospital in Hangchow which shall serve as a model for other cities, systematization of medical training through the republic, the construction of a central field station and the training of sanitary technicians and inspectors for outside localities, and a closer cooperation with the Eastern Epidemiologic Bureau at Singapore. Dr. R. Gautier, director of the bureau, has undertaken an intensive study of cholera problems in China. Among other results achieved by Dr. Rajchman and his colleagues are the definite cooperation between the various groups of medical practitioners trained in the different colleges of the world; collaboration in Shanghai between the health authorities governing Shanghai (Chinese), the International Settlement (mainly British) and the French municipal area to combat cholera and smallpox. Other provisions in the health program include assistance to the new national hospital's health demonstrations in educational centers and assistance in medical education.

Society News.—The Italian League for Combating Cancer has offered a prize of 15,000 lire for the best unpublished work on the value of serologic methods in the diagnosis of malignant tumors. Two typewritten copies of the work should be sent by competitors before June 30, 1931, to the Lega Italiana per la lotta contra il cancro, Via Triboniand, Piazza Cavour, Caso del Mutdato, Rome.——The first International Congress of Neurology was held at Berne, August 31-September 4, for the discussion of the diagnosis and treatment of cerebral tumors; the anatomy, physiology and pathology of muscular tone; acute suppurative infections of the nervous system, and the rôle of trauma in the production of nervous symptoms.——The ninth Roumanian Congress of Otorhinolaryngology will be held at the Coltea Hospital, Bucharest, October 25-26. The subject for discussion will be radiography in otorhinolaryngology. Further information can be obtained from the general secretary, Dr. Lazar-Mayersohn, Calea Mosilor 81, Bucharest.——The permanent committee of the International Congress of Military Medicine and Pharmacy met during a recent conference of the heads of the sanitary services of thirty-two nations at Liége. Dr. W. Seaman Bainbridge was the representative from the government of the United States. Gen. J. C. Diehl, surgeon general of Holland, was elected president of the sixth congress to be held at The Hague in June, 1931.——The third International Congress of Anatomists was held, August 4-9, in conjunction with the second International Congress of Cytology in Amsterdam; 189 papers were read and 72 demonstrations exhibited.——The Association of Medical Instruction of the Paris Hospitals announces a supplementary two weeks course on disorders of the heart and of the blood vessels. The lectures will be given, October 13-25, under the direction of Dr. C. Laubry. The price of the course is 150 francs. For further information address Dr. Y. Mevel, Broussais Hospital, 96 Didot Street (14e) Paris.

Government Services

Change of Station in the Navy

The following changes of station have recently been announced: Lieut. Comdr. Frederick L. McDaniel to Fitzsimons General Hospital, Denver; Lieut. Comdr. Benton V. D. Scott to submarine base, Pearl Harbor, T. H.; Lieut. Comdr. Robert H. Collins to duty involving flying, U. S. S. *Aroostook;* Lieut. Comdr. Leo L. Davis to duty at the Naval Training Station, San Diego, Calif.; Lieut. Francis G. Gleason to the Navy Yard, Boston; Lieut. Louis E. Gilje's resignation canceled and he is ordered to duty at the U. S. Naval Hospital, Mare Island, Calif.; Lieut. George B. Ridout to the U. S. S. *Texas;* Lieut. Comdr. Warwick T. Brown to second brigade, U. S. Marines, Nicaragua; Capt. Thurlow W. Reed to naval station, St. Thomas, Virgin Islands; Lieut. Joseph W. Kimbrough, Jr., to Naval Hospital, San Diego, Calif.; Lieut. Oscar D. Yarbrough to Naval Medical School, Washington, D. C.; Lieut. Rufus A. Schneiders to navy recruiting station, Denver; Lieut. Harry J. Scholtes to duty with La Guardia Nacional de Nicaragua; Lieut. Robert J. Vaughn to naval station, St. Thomas, Virgin Islands.

U. S. Public Health Service

Asst. Surg. Everett B. Archer, relieved at Warsaw, Poland, and assigned at Washington, D. C.; Sr. Surg. Emil Krulish, relieved at Minneapolis and assigned at Prague, Czechoslovakia; Asst. Surg. Walter L. Barnes, relieved at Angel Island, Calif., and assigned at Washington, D. C., with the U. S. Employees Compensation Commission; Medical Director William C. Billings, relieved at Liverpool, England, about August 31, and assigned at London, England, in charge of service activities there; Asst. Surg. Ralph Gregg, relieved at Seattle and assigned at Warsaw, Poland, about August 16; Asst. Surg. P. A. Neal, relieved at Belfast, Ireland, and assigned at Cologne, Germany; Passed Asst. Surg. F. R. Brunot, relieved at Manila, P. I., and assigned at Washington, D. C.; Medical Director Dunlop Moore, relieved at Angel Island, Calif., and assigned at Nogales, Ariz., in charge of quarantine activities at that place; Asst. Surg. Edward C. Rinck, relieved at Cleveland, Ohio, and assigned at Atlanta, Ga., in connection with the medical and psychiatric service for federal prisons; Acting Asst. Surg. F. R. Maura, relieved at Miami, Fla., and assigned at the quarantine station, Sand Island (Mobile), Ala.; Surg. L. L. Williams, Jr., relieved at Richmond, Va., about September 1, and assigned at Washington, D. C.; Surg. H. A. Spencer, relieved at San Pedro, Calif., about September 1, and assigned at Angel Island, Calif., in charge of the quarantine station; Passed Asst. Surg. A. J. Aselmeyer, relieved at Prague, Czechoslovakia, about September 21, and assigned to Ellis Island, N. Y.; Surg. Lewis R. Thompson, relieved from present duties, about August 31, and detailed as assistant surgeon general in charge of the division of scientific research; Asst. Surg. Gen. Arthur M. Stimson, assigned to duty in connection with the work of the National Institute of Health and such other duties as may be assigned, effective September 1; Surg. Vance B. Murray, relieved at Buenos Aires, Argentina, and assigned at the marine hospital, Stapleton, N. Y.

Changes in Veterans' Bureau Personnel

The August U. S. Veterans' Bureau Medical Bulletin announces the following recent changes in veterans' bureau personnel:

HOSPITALS

Dr. Thomas M. Barnett, transferred to Atlanta, Ga.
Dr. Rhodric W. Browne, transferred to Walla Walla, Wash.
Dr. Alpha J. Campbell, transferred to Memphis, Tenn.
Dr. William H. Daniels, resigned at Minneapolis.
Dr. George V. P. Davis, transferred to Perry Point, Md.
Dr. Augustus H. Eggers, transferred to regional office, Pittsburgh.
Dr. Harry L. Friedman, transferred to Fort Bayard, N. M.
Dr. Maurice H. Goldman, transferred to Knoxville, Iowa.
Dr. Harvey C. Hardegree, appointed at Atlanta, Ga.
Dr. Oma E. Herndon, transferred to Atlanta, Ga.
Dr. Ellis K. Kerr, resigned at Hines, Ill.
Dr. Loniel A. Mahone, appointed at Tuskegee, Ala.
Dr. Cummings H. McCall, appointed at Gulfport, Miss.
Dr. Kemper Mohs, appointed at Palo Alto, Calif.
Dr. Edward K. Moore, transferred to Atlanta, Ga.
Dr. William E. Park, transferred to Fort Bayard, N. M.
Dr. Frank Racz, transferred to Bronx, N. Y.
Dr. Malcolm L. Samms, transferred to Fargo, N. D.
Dr. Sam H. Sanders, Jr., appointed at Memphis, Tenn.
Dr. David W. Tastet, transferred to central office board of appeals.
Dr. Roland E. Toms, transferred to Palo Alto, Calif.
Dr. Lewis A. Walker, transferred to Alexandria, La.
Dr. Louis H. Webb, transferred to central office.
Dr. William J. Young, reinstated at Atlanta, Ga.

REGIONAL OFFICES

Dr. James P. Bailey, appointed at San Francisco.
Dr. William R. K. Beck, appointed at New York.
Dr. Duncan D. Bullock, resigned.
Dr. Robert S. Carey, transferred to central office.
Dr. Marvin F. Crowell, appointed at Cleveland.
Dr. Wendell P. Dally, transferred to Baltimore.
Dr. Edward G. Dovey, appointed at central office.
Dr. Boyd F. Eye, Jr., appointed at central office.
Dr. John C. Hind, Jr., transferred to Cleveland.
Dr. Robert Hodes, appointed at central office.
Dr. George C. Marlette, appointed at central office.
Dr. James H. McCall, resigned at Nashville, Tenn.
Dr. Larry D. Rider, appointed at central office.
Dr. Foye R. Troute, resigned at Denver.
Dr. William J. Wallingsford, appointed at central office.
Dr. Paul W. Wilson, appointed at central office.

Examinations for Entrance Into Public Health Service

The U. S. Civil Service Commission announces the following open competitive examination for senior and associate medical officer (pathology). Applications must be on file with the civil service commission at Washington, D. C., not later than September 24. The examinations are to fill vacancies in the U. S. Public Health Service, and in positions requiring similar qualifications. The entrance salaries range from $4,600 to $5,400 a year for the senior grade, and from $3,200 to $3,800 a year for the associate grade. Higher salaried positions are filled through promotion. Competitors in the examination for senior medical officer will be rated on their education, training and experience, and on a thesis or publications. Competitors in the examination for associate medical officer will be rated on their education, training and experience. Full information may be obtained from the U. S. Civil Service Commission, Washington, D. C., or the secretary of the U. S. Civil Service Board of Examiners at the postoffice or customhouse in any city.

Army Personals

The following changes of station in the army have recently been announced: Major John C. Dye to Fort Francis E. Warren, Wyoming; Major Alvin C. Miller to San Francisco, about October 20, for duty in the Ninth Corps Area; Major Herbert B. Montgomery to Fort Schuyler, New York; Major Thomas H. Stewart, Jr., to Camp Knox, Kentucky; Lieut. Harry Boaz Ditmore to Maxwell Field, Alabama, for duty; Lieut. Harold E. Coder to Fort McDowell, Calif.; the promotion of Capt. Alexander P. Kelly to the grade of major with rank from August 19.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 16, 1930.

Medical Socialism Promotes Wholesale Malingering

All socialistic attempts to make the community do what individuals should do for themselves have proved failures. The lesson may be read in the failure of the communal system of the pilgrim fathers, tried after they landed in America, as well as in Russia today. Our "national health insurance" is a gigantic scheme of medical socialism. Here is the report of the cautious official of the ministry of health, anxious not to say too much: "It is difficult to avoid the presumption that the habit of making unnecessary claims has set in and has steadily grown." Attempts are made by labor politicians to blink this fact. In an editorial, the position is revealed by the *Birmingham Medical Review:* "The habit of making unnecessary claims is well known to every panel doctor. In a way he is responsible, for he writes the certificates on which the claim is based. But, poor devil, he is in an impossible position. Authority has created the position. Aided by Authority, the suppliant for benefit holds the whip hand every time. He can demand the certificate with the threat 'Give me what I want or I'll change my doctor.' The highbrow people with fixed official salaries shake their heads when told that panel doctors cannot afford to resist doubtful claims. But the panel doctor knows from much painful experience that the happiness of himself and his family must depend on whether he is or is not popular with the insured population. And popularity depends only very slightly on professional capacity; almost entirely on willingness to accede to demands. The man who will deal out prescriptions and sickness certificates without questioning is popular. He gets the big panel. His more particular brother finds his panel dwindling. The newspapers have been trying to show that the panel patient seeking a rest is a model of everything a patient should be; that his physical condition is undermined by unemployment and consequently he is entitled to sickness benefit. It is not true." This may be compared with the experience of Germany, the pioneer of medical socialism. Dr. Erwin Lick, in his book "The Doctor's Mission," says that the German system of medical insurance has promoted wholesale malingering to obtain incapacity payments. Again, in New Zealand the proposal to introduce medical insurance is opposed both by the profession and by the public. A leading journal, the *Dominion,* says: "It is not only that great bureaucracies grow up and fatten on such schemes, but that the so-called beneficiaries are morally debauched, losing self-reliance and independence."

The Path of Spread of the Poliomyelitis Virus

At the Lister Institute of Preventive Medicine an important experimental research on the path of spread of poliomyelitis, by Drs. R. W. Fairbrother and E. W. Hurst, has been brought to a conclusion. The theory of spread in favor has been that the virus entering the body by the nasopharyngeal mucosa or by the intestinal tract reaches the central nervous system by the perineural lymphatics and is then disseminated by the cerebrospinal fluid. The primary lesion was held to be a meningitis which spread inward along the vessels of the anterior fissure to the anterior horns of the spinal cord. Minute histologic examination during the incubation period and the symptomatic stages, combined with search for the virus during the same periods, produced no evidence in support of this theory. On the contrary, all the facts and especially the mode of advance of the lesions and the distribution of the virus after intracerebral inoculation pointed to the axis cylinders as the chief routes of transmission of the infective agent. Meningitis was never observed in the early phases of the disease, which began as a primary degeneration of the anterior horn cells, accompanied by foci of interstitial inflammation in the interior of the brain and cord. The mode of development following intranasal inoculation also supported this view. Whatever the route of inoculation, histologically, the infection spread from above downward, while the first symptoms were nearly always referable to the lumbar cord. The virus occurs most abundantly in those regions of the nervous system which show the most marked neuronal changes.

POSTVACCINAL AND OTHER FORMS OF ENCEPHALITIS

A number of cases of postvaccinal encephalitis and two cases of encephalitis occurring as a complication of smallpox were studied. While yielding no new information as to the essential nature of the morbid process, the histologic study permitted the identification of the encephalitis following smallpox with that following vaccination and other exanthems. Attempts to transmit the encephalitis to monkeys and rabbits by intracerebral or intramuscular injection of human brain material, combined in some cases with cutaneous vaccination, have been unsuccessful, as have endeavors to demonstrate the vaccinia virus in the nervous tissues by repeated intradermal passage in rabbits.

IMMUNIZATION AGAINST POLIOMYELITIS

Of the various serums used in poliomyelitis, only human convalescent serum has been found to contain antiviral properties demonstrable by neutralization tests. Obviously, the use of this serum is highly restricted. A horse was immunized by a series of intramuscular injections of increasing doses of a virulent monkey cord filtrate. At the end of the course Dr. Fairbrother found that the serum had antiviral properties comparable with those possessed by human convalescent serum. Before immunization the horse serum did not possess this property. It is hoped to make the serum of this horse available for therapeutic trial in man.

Abolition of the Speed Limit of Automobiles

The road traffic bill, now under discussion in the house of commons, fixes new speed limits for heavy vehicles but abolishes the speed limit for private automobiles. A physician, Dr. Salter, moved an amendment to fix the speed limit for the latter at 35 miles an hour. He said that on the passing of the amendment depended the lives of many thousands. If the present rate of increase in automobile accidents continued, in three or four years more than 10,000 would lose their lives on the roads every year. One of the causes of these terrible calamities was excessive speed. The bill did practically nothing to reduce the terrible toll of human life. The minister had refused to include practically every safeguard suggested. Pedestrians were not even safe on the pavement; no fewer than three people were killed every day while walking or standing on the footway. The bill did nothing to deal with these offenses beyond increasing the penalties. Reckless and dangerous driving was illegal but the police were doing next to nothing to stop it.

In reply, Mr. Morrison, minister of transport, said he recognized that abolition of the speed limit for light cars was a serious step, but in his opinion the speed limit had broken down. The British police had the instinct not to enforce a law which was out of date and against public opinion. If a speed limit of 35 miles an hour was laid down, the driver would tend to get it into his mind that in driving at this rate he was driving reasonably. The problem was to be solved not so much by compulsion as by education and the inculcation of a social conscience. He was anxious that the motorist's mind should be concentrated on what was careless and reckless driving in the circumstances of the case, and he hoped that magistrates would inflict severe penalties. As they abolished the speed limit, they must redouble their efforts to deal with the dangerous driver. The policeman on foot was at a disadvantage in dealing with

dangerous driving. A force of police mounted on motorcycles and automobiles would be formed to deal with it. The amendment to fix a speed limit was rejected by 180 votes to 99. Of course this abolition of a speed limit does not mean that a motorist can drive as he likes. He is liable to be prosecuted for dangerous driving and his speed taken into account in relation to the circumstances, whether in town or in country, whether he was driving in crowded streets, or otherwise. But many people regard the abolition of the speed limit as a measure which increases the already great dangers of the streets to the pedestrian. In spite of the dreadful daily toll of deaths there seems to be no one to champion the pedestrian, perhaps because those who control the press as well as most important persons are motorists themselves. Some time ago a London surgeon, Mr. Zachary Cope, made an investigation of automobile accidents and found a direct relation between speed and the proportion of fatalities.

PARIS

(From Our Regular Correspondent)

July 30, 1930.

Criticism of Sterilizing Methods

Dr. Robineau, surgeon to the Hôpital Necker, gave a lecture recently on the value of methods commonly employed for the sterilizing of instruments and operative equipment. He criticized especially the use of dry heat. He has no confidence in instruments or dressings that have been enclosed in the hot-air bath, even for a long time. Cultures of bacilli and spores, once dried, resisted a stay of an hour in the bath at a temperature of 140 C. Schimmelbusch had to raise the temperature to 180 C. and extend the time to two hours in order to kill the spores of the anthrax bacillus. Baudouin put in a copper dish cultures of *Staphylococcus aureus* and *Bacillus subtilis* and allowed them to dry. Afterward he allowed the blue flame of a bunsen burner to play for three minutes over all parts of the copper dish but was never able to obtain sterilization. It is an illusion to believe that the needle of a pravaz syringe, which has been contaminated by pus, can be sterilized by passing it through the flame of an alcohol lamp. Phenol, alcohol, ether, chloroform and tincture of iodine are no more effective. Mr. Robineau attaches more faith to boiling in a solution of sodium carbonate or sodium borate, whereby a temperature of 104 C. is attained. After all, the autoclave is the preferable sterilizer, and the formula recommended by Pasteur has not been superseded; that is to say, a stay of fifteen minutes in a milieu of saturated steam, at a temperature of 115 C., is sufficient to kill all micro-organisms and all spores. By raising the temperature to 130 C. and the duration of the application to thirty minutes absolute security can be obtained, and no other procedure merits to the same extent the confidence of the surgeon.

Influence of Barometric Pressure on Epidemics

Mr. Trillat, professor at the Pasteur Institute in Paris, gave recently, in an important article presented to the Academy of Medicine, a brief account of the researches that he has been carrying on for many years on the influence of meteorological agents (humidity, temperature, radioactivity, barometric pressure, and others) on the genesis of epidemics, and explained how local cases may spread through droplets of micro-organisms from the air, or through the saliva or buccal and nasal mucus particles. Trillat called attention to the remarkable effects of sudden barometric depressions, which are not recorded by the ordinary instruments and which have the property, if other conditions are superimposed, of collecting droplets with micro-organisms and of favoring their multiplication. This double phenomenon is due to the instantaneous chilling produced by the liberation of gases from the soil and other objects under the influence of the depression of the gases, which constitute, in a humid environment, food for the micro-organisms suspended in the atmosphere. Trillat showed how this theory could be applied to the march of the great epidemic of influenza of 1889-1890 and to that of a chosen case of typhoid. He concluded by showing what great services the rational organization of a department of medical meteorology might render to the cause of hygiene.

Poisoning Due to Shoe Dyes

Mr. Kling, director of the laboratory of the prefecture of police in Paris, has just published a study on poisonings caused by dyes for shoes or clothing. The dyes did not all have an aniline base. Some had as a base aromatic amines in which a catalyzer is dissolved—usually a trace of vanadic acid, which produces a brown-black color. Kling cited three grave cases of poisoning of this kind due to aniline or to orthotoluidine. He reported also cases of a milder nature—characterized particularly by cutaneous phenomena, with certain peculiar anaphylaxis observations. Finally, he referred to cases of poisoning due to furs dyed with paraphenylendiamine, and others due to the use of certain kinds of rouge for the lips.

Medical School in Madagascar

Madagascar is at present enjoying a high degree of prosperity. And since the salubrity of the country and the maintenance of the birth rate of the natives are essential conditions for the continuance of this prosperity, the colony has not hesitated to devote considerable sums, a tenth of its total budget, to expenditures calculated to improve hygienic conditions and the quality of medical aid. A school of medicine for natives has been created, which is flourishing; also a bacteriologic laboratory, a chemical laboratory, and 537 health centers at which more than 300 native physicians, trained in the colony, have been engaged. These services require the expenditure of 28,000,000 francs ($1,120,000) annually. Mr. Camille Briquet, delegate of the budget committee to the chamber of deputies, emphasized, however, the need of largely increasing these appropriations and suggested that a part of the new loan that the colony is now floating be used to improve the hygienic services, in order that Madagascar may become the healthiest colony of Africa.

Securing the Title of Foreign Assistant at the Faculty of Medicine

The title of foreign assistant, which is much sought after by foreign students, heretofore has been at the free disposal of the professor who is the head of the particular service. A new regulation, introduced by the council of the faculty, imposes henceforth certain conditions on candidates for this title. A request will first be considered by the council of the faculty, which will inquire into the personal and official qualifications of the candidate. If the report of the council is favorable and the candidate is accepted by the professor in question, the candidate will be authorized to study six months in his service, at the end of which time he must present a personal study, which will be examined by one of the sections of the council. It is only after the examination of such personal study that the title of *assistant étranger* can be secured, together with the right of fulfilling effectively the duties associated with the title. By way of exception, in the case of candidates who already possess important scientific titles, the duration of the period of study may be reduced, but in that case the candidate will be expected to prepare during that time a valuable article based on personal research.

Bust in Memory of Dr. Capitan

Dr. Capitan, who died last year, was an eminent ethnographer and anthropologist. His researches on the primitive races of America are of great value. A professorial chair had been created for him at the Collège de France, to promote the study of preamericanism. He had made also extensive research on the history of Paris and had found, on the Ile de la Cité, in

connection with excavations for the creation of the Metropolitan subway, traces of the piles that formerly encompassed the island, and even of the burning to which they were subjected during the Norman invasions of the thirteenth century. He bequeathed to the Archeologic Museum in Saint-Germain all his collections, which included some exceedingly valuable articles. His bust has been erected on the sands of ancient Lutetia, to the restoration of which he contributed in his lifetime. Mr. d'Andigné, president of the municipal council; Mr. Louis Marin, director of the Ecole nationale et de l'Institut international d'anthropologie, and Mr. Salomon Reinach, director of the Musée de St. Germain, delivered on the occasion fitting addresses in which they outlined the career of the eminent savant.

ITALY

(From Our Regular Correspondent)

July 30, 1930.

Missionaries and the Public Health

In the city of the Vatican, the aid that sanitary science, or medicine, can and should bring to missionaries is being studied. According to statistics, the length of life of missionaries averages only 78 per cent of the theoretical values shown in actuarial calculations. In Africa, it reaches scarcely 75 per cent of the average normal life. In other words, the missionary dies nineteen years too soon. An endeavor will be made to remedy this state of affairs by the introduction of special hygienic and sanitary provisions. If a missionary knows how to cure disease he acquires a great influence over the native population, which aids him in his educational work. To take full advantage of this fact, it would seem better not to have missionaries trained in the art of healing but to prepare physician-missionaries. Until such special personnel is available, the church will face the need of giving a practical medical training to some of the present missionaries.

The Convention at San Pellegrino

Under the auspices of the Associazione italiana di idroclimatologia, a convention was held recently at the watering place of San Pellegrino. Professor Devoto of the University of Milan delivered the inaugural address. Professor Foà, in a paper on the relation between physiology and medicine, discussed the regulation of the formation and distribution of cutaneous pigment, and the influence that the nervous system and certain hormones have on such phenomena. Foà considered also the physiology of skin circulation and explained the relations between sympathetic innervation, the secretion of the suprarenal glands, and the cutaneous and visceral phenomena associated with certain emotional states.

Professor Valenti gave a paper on the pharmacology of the skin dealing with absorption and fixation of drugs by the skin.

Prof. Mario Truffi of the University of Padua discussed the pathogenesis of eczema, explaining the influence of microorganisms in the causation of eczema and especially the importance of factors that sensitize the skin. The speaker emphasized the influence of general metabolism and diseases of the internal organs in predisposing an individual to dermatosis. He took up the treatment of eczema and the results secured by means of desensitization and the roentgen rays.

The last session was under the chairmanship of Professors Devoto and Alfieri. Prof. Maurizio Ascoli of Palermo discussed "The Skin and Internal Medicine," bringing out the importance of the skin in the diagnosis of many diseases. He discussed the relation between the skin and the glands of internal secretion, and the skin and the disorders of metabolism.

The Problem of Hospital Aid

Before the chamber of deputies, the problem of hospital aid to persons in need was recently discussed. The majority of the hospitals are not in an easy economic condition, while the balances of the communes, which are responsible for the hospital bills for the indigent, are low. To meet this situation, which is growing worse, a radical reform of the aid rendered the sick has been proposed by extending to all classes of workers the obligation of insuring themselves against disease. In that manner, the cost of hospital aid would be transferred entirely to the insurance societies and institutions. Another reform proposed would assign to the communes or to the provinces all responsibility for the rendering of hospital aid, the present property of the hospitals being turned over to them. The ministry of the interior did not think it could accept the proposed modifications, so that the problem remains unsolved.

Medical Aid for Railway Employees

The Associazione dei ferrovieri recently reached an agreement with the medical profession in regard to the conditions on which medical aid will be furnished its members. The general medical service will be given in ambulatoriums; but, if the condition of health of the employee demands it, domiciliary treatment will be accorded. When summoned, the physician will go to the home of the employee as soon as possible, and, in any event, within six hours. After each visit, the employee will give the physician a coupon, and two coupons for a night visit. The physician must notify the association of cases due to dissolute living or other forms of guilt, and also chronic cases.

The service of specialists is secured at the ambulatoriums, or, if these do not exist, at the offices of the specialists. The treatment is mostly free to the employee and is paid for by coupons that are redeemed by the association. Dental work, however, is paid for directly by the employee, in accordance with a minimal tariff schedule agreed on with the medical profession.

Free obstetric aid is provided by means of midwives, general practitioners and specialists. In order to secure fluoroscopic and roentgenographic examinations, authorization of the Associazione dei ferrovieri is required. The physician must give the employee duplicates of all roentgenograms and a written interpretation of the roentgenograms and of the fluoroscopic examination.

Technical Session of the Mineral Springs Assembly

Under the chairmanship of Prof. Ermanno Fioretti, the first national assembly of the Sezione tecnica stazioni termali e di cura was held in Rome. Professor Fioretti, in the inaugural address, emphasized the importance of thermal springs and of health resorts in Italy. Dr. Guido Liebmann, a trustee of the section, described the activities of the section in the field of the organization of conventions designed to extend the knowledge of the bath and climatic resorts.

Professor Sabatini supported the idea that every nation should prepare an official list of its health resorts, classifying them according to their regional, national and international importance. That has been done in France and in Germany. He supported also the need of specialization of physicians in hydrotherapy and climatotherapy. Mineral waters are, properly speaking, drugs, and as such should be prescribed solely by competent physicians.

Professor Sgobbo announced that at the University of Naples instruction in hydrology has been resumed.

Professor Ceresole discussed thalassotherapy, saying that one of the primary needs is to train specialists who have the ability to regulate with wise judgment the whole life of the children at the seaside.

Professor Valenti pointed out that at present no mention is made in the medical schools of Italy's mineral springs and health resorts, and that even the venia legendi in hydrology is suppressed. Two resolutions were passed, one directed to the clinics of the Italian universities requesting that students receive instruction in regard to the thermal springs of Italy, the other addressed to the manufacturers, suggesting that they establish

scholarships with the funds that they are now spending for propaganda to the physicians.

Statistical Data on the Crusade Against Tuberculosis

Professor Garbasso presented recently to the government an account of the activities of the Cassa stessa nella lotta antitubercolare, in applying the law on compulsory insurance against tuberculosis. The obligation to be insured against tuberculosis applies to all persons who already were insured against invalidity and old age. The aid given consists in admission to special sanatoriums, or in giving ambulatory and domiciliary treatment. Since the law became effective, Jan. 1, 1929, the number of persons to whom aid was given was 29,107. Of these, 15,336 remained as of April 30, 1930. The number of days of hospitalization in the *istituti ospedalieri* increased from 455 in January, 1929, to 456,544 in April, 1930. The complete number of days of hospitalization was 3,496,241. The number of beds available in the various *istituti* is inadequate to the needs of the situation. There are 3,094 beds in the sanatoriums; 1,280 in the *ospedali sanatoriale;* 2,793 in the civil hospitals; 1,789 in the *istituti marini,* or a total of 8,956. The need of sanatoriums and hospitals being promptly erected by the *cassa* is apparent. The following buildings are in course of construction or have already been planned: (1) *costruzioni sanatoriali,* with 3,088 beds; (2) *ospedali sanatori,* appropriated for, with 2,836 beds; (3) *ospedali sanatori,* definitely considered, with 2,260 beds; (4) *ospedali sanatori,* for which sites are being sought, with 3,450 beds. The Ospedali sanatorio di Roma, with 1,250 beds, will include also the Clinica tisiologica of the University of Rome.

In four localities selected for the construction of villages with 2,000 beds each, observations have been made for the past six months to determine such facts relative to the climate as temperature, precipitation, wind and sunshine.

A Journal on Penitentiary Management

The general management of the Istituti di prevenzione e di pena will begin soon the publication of the *Rivista di diritto penitenziario,* a review on penitentiary management. The new journal will be an exponent of the modern conceptions of anthropology and sociology, according to which the penitentiary and the jail should be regarded as clinics where one studies the psychic evolution of the inmates. The new Italian penal code and the code of criminal procedure, which are about to go into effect, are based on similar theories.

BELGIUM

(From Our Regular Correspondent)

Aug. 12, 1930.

Poliomyelitis Serum for Distribution to Physicians

To combat acute poliomyelitis, the Administration centrale de l'hygiène has decided to undertake the manufacture in Belgium, under the direction of Mr. Bordet, of horse serum in accordance with the formula of Professor Pettit; to have immune monkey serum prepared at the Pasteur Institute of Paris, and to organize, on a large scale, the collection, conservation and distribution of the serum of convalescents. These remedies will be placed at the disposal of the physicians who may desire to make trials with them.

An organization has been created to effect a constant cooperation between former poliomyelitis patients, donors of blood, and physicians who require the serum of convalescents. Every person who has had previously any form of poliomyelitis, though slight, will be instructed as to the purpose of the service and will be asked to make a contribution of blood, which, if need be, will be paid for by the central government. The provincial and the university laboratories will cooperate in collecting serum and will distribute it to physicians. The directors of these institutions will become the depositories in each case of two thirds of the quantity collected, which will be considered as belonging exclusively to the physician of the donor and of which he cannot be dispossessed without his consent. The remaining third will be sent to the central state laboratory for distribution to any part of the country where it may be needed.

Anthracosis

Mr. Courtois outlined recently before the Société belge d'études sur la tuberculose the symptoms of anthracosis. This disease is differentiated from emphysema by the absence of a deformed thorax and alteration of the general condition. In a study of the functional signs he has observed the frequency of gray sputum as opposed to the black sputum usually mentioned. An analysis of the physical signs leads to the denial of the presence of manifestations of pulmonary induration. The radiologic signs indispensable for a diagnosis are bilateral lesions at the base and around the hilus, disseminated and nodular at first but later confluent and encircled by an area of emphysema, without the stages succeeding one another like the phases of an evolution of a unique type. The pathogenesis, which has been much discussed, no longer ascribes to coal-dust alone a fibrosing rôle in the lung. That rôle cannot, however, as has been done by mistake, be attributed to a concomitant pulmonary tuberculosis, nor to a silicosis. Silica is not a common substance found in coal mines; yet sclerosis among miners is frequent. Nor are bronchitis and emphysema essential factors of sclerosis.

Thyroidectomy After Radiotherapy for Goiter

At the Congress of Otorhinolaryngology, Mr. Van den Wildenberg reported the observations in seventeen cases of thyroidectomy performed after failure of radiotherapy, seven of which presented symptoms of cardiac decompensation. The author reached these conclusions: The lamentable thing about the treatment of exophthalmic goiter, whether specific or symptomatic, is that it does not accomplish its purpose and, above all, that it entails a great loss of time. The benefits secured by radiotherapy are, at the most, temporary, and there is danger of the operative field being damaged. Operation, if done early and well, will cure exophthalmic goiter in the vast majority of cases. The danger from early operation performed by an experienced surgeon is practically nil. The danger from late operation, even in grave cases, is much reduced for the experienced operator who knows how properly to prepare the patient and fraction the operation. Unfortunately, however, in such grave cases the operation does not always cure the patient. It is, nevertheless, more effective than radiotherapy.

Hygiene Among the Black Races

The question of employing for various kinds of work members of the black races of Africa raises many problems. Recruiting is difficult and often inadequate, and questions concerning lodging, food and transportation, which are the principal aspects of hygiene involved, are frequently thorny problems. A paper recently presented by Dr. G. Trolli, chief physician of the colony, contains valuable information on the subject. It is a mistaken assumption sometimes that a Negro coming from any part of the colony is apt for any and all kinds of work. It is among the workers in the mines, on construction enterprises, in railway employment and on automobile roads that one finds the worst types. It is with these classes of workers that physicians must concern themselves first of all.

One of the most important changes to be brought about is to make the black workers more stable; to establish villages in the vicinity of factories and stable industries. In a few years such villages would be comparable to the communities in the metropolis. Acclimatization of the workers is one of the most important factors. It should be carried out in a systematic way and should extend over a sufficiently long period. Over-

crowding and especially compounds should be avoided. An endeavor should be made to give the newly recruited workers the feeling that they are living in *their* country, surrounded by people of their own race. They should have food similar to that to which they are accustomed in their native villages. At first they should not be expected to perform other than minor tasks. They should not be held down to a regular schedule of hours until they have become somewhat habituated to their new surroundings. The recruit when first put to work expends an enormous amount of energy, although his output may be small; for he is not accustomed to that kind of work and he is expected to work much faster than he is in the habit of working. The Union minière, a mining corporation, reports that the mortality among the recruits is 76.99 per thousand, whereas it is only 29.34 per thousand among the habituated workers.

CAPE TOWN

(From Our Regular Correspondent)

July 18, 1930.

Prevention of Malaria

The visit of Sir Malcolm Watson, M.D., to northern Rhodesia, at the invitation of the mining groups that are trying to exploit the wealth of the copper belt, necessitated a fleeting sojourn in the union of that brilliant malariologist. The government, urged by the Afrikaans press, which has for years pleaded for an organized attack on malaria, invited Sir Malcolm to become its guest while in South Africa and to visit some of our own malarious areas. He has done so and has drawn up a valuable report, which is understood to recommend, as a first step, a thorough mosquito survey of the union and thereafter intensive attack on the malaria-carrying species. Sir Malcolm has, moreover, done useful work in stimulating public interest in the matter and has addressed well attended public meetings and revived to some extent the enthusiasm aroused originally, more than twenty years ago, by the establishment of the antimalaria association in the Transvaal. Malaria in this country, while it does not present the difficulties that beset its extermination in equatorial countries, yet presents certain interesting problems. The absence of permanent aquatic breeding places and the diversity of species of mosquito complicate the main problem. *Anopheles funestus* is probably our most ubiquitous carrier, and it is said that *A. mauritianus* does not carry malaria; *A. ludlowii* has apparently not been found, but *A. theileri* and other species seem to approach it closely in biologic and bionomic characters, and it is possible that in a few undiscovered species we have carriers which will demand for their destruction new and original methods. Malaria does not cause many deaths annually, but it causes a vast amount of industrial loss and indirectly accounts for more fatalities than the statistics seem to admit. It is undoubtedly responsible for the rapid deterioration of white stock in the northern territories. The prevailing type in the union is the malignant form; the quartan type is much rarer, and the benign tertian is local rather than general. An interesting point in connection with the disease is its sequelae in the shape of malarial psychoses and the production of a chronic malarious type of settler which is a distinct liability to the state. It has been calculated that a third of the juvenile criminality in the Transvaal is indirectly due to malaria. In an official report in 1920, Leipoldt and Cleaver drew attention to the deterioration among school children in that province as the result of malaria; they reported spleen percentages in excess of 80 at some schools and regarded the whole of northern Transvaal as endemically malarious but pointed out that much could be done to counteract the effects of the disease. Since then the department of education in the Transvaal has been the only government department that has done something on an organized scale to deal with malaria. It has also established bilharzia camps where children are treated free of charge. The whole problem of the malarious white child in the Transvaal schools is complicated by the question of malnutrition, as these children are for the most part grossly underfed. The acidosis which is so frequent an accompaniment of malaria in their case is probably as much due to the malnutrition as to the malaria. In the majority of cases the children respond well to treatment, provided quinine is given systematically and in adequate doses. They appear to stand quinine well and to tolerate large doses, and there is no need to give the more expensive euquinine or ethylcarbonate salt in preference to the far cheaper dihydrohloride.

Now that the government has had the advantage of Sir Malcolm Watson's advice and has also invited Professor Swellengrebel to report on the malaria situation here, we hope that the problem will be tackled in some organized manner; but it is difficult to imagine how a successful campaign can be planned and carried out under existing legislation. Such legislation, indeed, is the great stumbling block to advance in public health in the union. Although public health is a function of a special department of the central government, special parts of it are reserved exclusively to the provinces, with the result that there is overlapping, inefficiency, and loss of money, energy and time. What is infinitely of more impotance is that under this dual control there is great diffidence in initiating any policy and constant friction. The only reasonable solution is the complete centralization of public health in the hands of a competent department in which the provinces are represented and the devolution of local problems to local authorities under a properly thought out scheme.

Medicine and the Public

Next week the third medical congress, held under the auspices of the Medical Association of South Africa, meets at Durban in Natal. At the last congress, held at Port Elizabeth last year, a public lecture was instituted, and the precedent is to be followed this year. Unfortunately the subject chosen for the lecture, "Early Man and His Progress," is one in which the public certainly would not feel much interest, especially when it is given by a surgeon and not by an anthropologist. Our South African public, like that of all civilized countries, is intensely interested in medicine; but it wants facts about diagnosis and treatment, causation and everything else that is of interest, and not popular scientific disquisitions on subjects that it can read up on, easily enough, in *Nature* or the *Scientific American*. The first popular lecture was by Dr. J. Orenstein and dealt with cures and cure-mongers; it was immensely popular and was reported in practically every lay paper, while the publicity which it gave to exposures of quacks and cancer cures did immense good. It is a great pity that this year's lecture is not of that nature and that the association does not seize this splendid annual opportunity to place before the public a review of the advances made by medicine during the past twelve months. Such an exposition would be popular and would be followed with keen interest by the lay audience, which always rolls up well on such occasions.

On the agenda of the congress are two interesting items. One is the discussion on the proposal to establish a modified medical service for the native territories, staffed by natives who have undergone preliminary training in medicine or are given an inferior degree. It is possible that this proposal will be strongly criticized and that it will be defeated, for the profession has declared itself succinctly in favor of maintaining the present high standard of medical qualifications. The other item is the discussion on leprosy. The national policy with regard to this disease has so far been strict segregation, which is expensive, ineffective and open to criticism. A frank discussion of the modern methods of dealing with the disease would be welcome and might lead to a modification of our policy with regard to it.

BERLIN

(From Our Regular Correspondent)

Aug. 11, 1930.

Tuberculosis Convention at Norderney

The German Tuberculosis Convention at Norderney, June 12-14, awakened interest on the first day through a discussion of the much debated topic "Metabolism and Nutrition in Tuberculous Persons" by Professors Grafe and Wichmann and Dr. Schröder. Professor Herrmannsdorfer of Berlin, who was to have treated the topic from the standpoint of the surgeon, did not appear, which fact was much regretted.

Grafe dealt with the metabolism and nutrition of tuberculous patients from the theoretical point of view. He raised many objections to the dietetic procedures advocated by Gerson and Herrmannsdorfer. The marked limitation of the protein intake, as recommended by Gerson, appears to him dangerous. The arguments for the "acid" diet of Herrmannsdorfer and Sauerbruch he does not consider tenable on a theoretical basis.

Schröder of Schömberg is opposed to an extensive withdrawal of sodium chloride from the diet in chronic tuberculosis of the lungs and the mucosae. He rejects the most recent dietary prescriptions of Gerson, because the diet is too poor in protein and contains too much water. He thinks it is irrational to prescribe for the tuberculous a too extensive use of raw foods, because the weakened gastro-intestinal canal cannot handle a diet with so much roughage. The success achieved with the use of an ordinary mixed diet is not surpassed by the Herrmannsdorfer diet employed in thirty cases of chronic tuberculosis. Among the Herrmannsdorfer patients there appeared after a time serious relapses following signs of improvement. A diet poor in salt can never be called a therapeutic diet and it is a mistake to vaunt it as such in the daily press.

According to Wichmann of Hamburg, the dietetic treatment advocated by the Gerson-Sauerbruch-Herrmannsdorfer method may bring about improvements in tuberculosis of the skin and of the mucosae, and in a few cases it may effect an anatomic cure, but exacerbations may occur.

During the discussion, Deist of Ueberruh still refused to endorse the salt-poor dietary, even as an adjuvant to the previously approved therapeutic methods, because the treatment is much longer than average and because of the higher cost. Griesbach of Davos regards the Gerson diet, which renounces almost all purines, as ill adapted for the treatment of pulmonary tuberculosis. Sauerbruch and Herrmannsdorfer have modified the Gerson diet by the admission of meat foods rich in purines, but the quantities admitted are by no means sufficient to exert a decisive effect on the disturbed metabolism of nuclein substances, such as would have a definitely favorable reaction on the tuberculosis. Wiese of Landeshut had seen no better results from the dietary treatment after the Gerson-Herrmannsdorfer-Sauerbruch method than with the previously approved methods in tuberculosis of the bone and the skin. In a child, it is too great a responsibility to lose valuable time with dietary treatment at the expense of effective collapse therapy. Wiese censured severely the extolling of dietary treatment in the lay press and in popular books, before science had pronounced its definitive judgment on the method.

Professor Brauer of Hamburg, an experienced authority, summed up the results of the discussion in the statement that in the field of a salt-poor diet great confusion still prevails because of the fact that every one has in mind a different modification of the diet. In lupus the results have been generally good, especially in exudative processes; in bone processes, not enough experience has been gathered on which to base a uniform judgment. In pulmonary tuberculosis, on the other hand, the new form of diet has been generally rejected by specialists.

On the second day the chief topic was "Cause of the Decline of Tuberculosis Mortality in Civilized Countries." President Hamel of the federal public health service, who opened the subject, stated that there has been, in recent decades, a decline in tuberculosis mortality in nearly all civilized lands. The highly industrialized countries show a greater decrease than countries in which agriculture predominates. In Germany, which of all lands shows the greatest decline in tuberculosis mortality, the decline in the cities has been greater than in the rural districts. The tuberculosis mortality among males has declined more in the higher age groups. Industrialization assures better wages and a higher standard of living for the working classes, with improvement in housing conditions and in the quality of food and clothing. It makes possible, also, better medical care and better opportunities for the carrying out of a well organized system of social insurance. Thus, industrialization is able not only to counterbalance the disadvantages associated with it but also to bring a surplus of compensation. The higher standards of living are, therefore, an essential factor in the decline of tuberculosis. The great progress in the diagnosis and treatment of tuberculosis has played an important rôle. There has been an earlier recognition of tuberculous subjects, with earlier treatment, on the average, and it has been possible more frequently to transform advanced types of tuberculosis from active to quiescent. An essential factor in the decline of tuberculosis is the development of care-taking centers, which have come to be the central influence in the campaign against tuberculosis. Through these centers, patients are discovered and prompt therapeutic measures are instituted. The centers aid financially the tuberculous and their families, when necessary, and improve the sanitary conditions of their dwellings. They are performing most meritorious service in the great crusade. The fact that tuberculosis in Germany has declined more rapidly than in other countries President Hamel finds explained by the German system of social insurance, which created a solid foundation for the improved care of the population; for a comprehensive carrying out of a highly developed system of medicine; for the consistent introduction of prophylactic measures, and for the creation of the care-taking centers. If Germany is to retain its position, it must keep its well tried weapons: the care-taking centers for the tuberculous; its abundant opportunities for competent treatment, and the aid provided by social insurance.

Georg Wolff of the bureau of health in Berlin divided the causes of the decline of tuberculosis mortality into four groups: the social factor, the hereditary factor, the specific factor and the medicotherapeutic factor. Of the social factors, the greatest importance attaches to the size of the family. The diminution in the average size of the family resulting from the decline in the birth rate has, he thinks, helped more to preserve the individual family than all previous additions to the family income. Furthermore, the new methods of treating tuberculosis, especially the internal, the surgical and the physicodietetic methods, constitute important therapeutic progress.

Regulations Pertaining to Diphtheria and Scarlet Fever

On July 17, the Prussian provincial council on health debated the question as to whether or not the adoption of less strict police regulations with regard to diphtheria and scarlet fever was in order, and, especially, as to whether or not the abolition or limitation of terminal disinfection of dwellings was indicated. The council reached the unanimous conclusion that a moderation of the regulations pertaining to diphtheria and scarlet fever (notification, the institution of inquiries, isolation) is not discussible, and that a less rigid enforcement of disinfection of dwellings is possible without making any changes in the present regulations. A complete abolition of disinfection of dwellings or a reduction of the requirements beyond the scope of the existing provisions is, however, not indicated.

Marriages

ALLEN G. BRACKBILL, Philadelphia, to Miss Marian E. Topper of McSherrystown, Pa., recently.

HARRY SANDS WEAVER, JR., to Miss Elizabeth Emmaline Garrett, both of Philadelphia, July 19.

ROBERT SMITH BOOKHAMMER to Miss Winifred Olmsted Moore, both of Philadelphia, July 19.

GUY A. ROBINHOLD, Ashland, Pa., to Miss Margaret R. Gallagher of Hazleton, recently.

JOSEPH P. BRENNAN, Pendleton, Ore., to Miss Willey Creagh Inge of Mobile, Ala., June 18.

MALCOLM GOODRIDGE, New York, to Miss Elizabeth Stone in Woodstock, Vt., August 11.

URSULA A. GREENSHAW, Mexico City, to Mr. Ernest Mandel of Vienna, Austria, August 1.

LESLIE MAX JENKINS to Miss Martha Lynch McDowell, both of Miami, Fla., June 21.

SAMUEL WOLFE, Philadelphia, to Miss Marie Weaver Yerkes of New York, September 4.

JOHN C. POWERS, Billings, Mont., to Miss Ruth Stauffler of Independence, Mo., recently.

AUGUSTUS SMITH KNIGHT to Mrs. Anita Merlesmith Pyle, both of New York, July 28.

BERNARD J. MCCLOSKEY to Miss Margaret E. Ryan, both of Johnstown, Pa., June 23.

JAMES T. TAYLOR, Drexel Hill, Pa., to Miss Ruth Snell of Ralston, June 2.

JASPER B. DOWLING to Miss Mary Horn, both of Alliance, Fla., June 20.

GEORGE RUKSTINAT to Miss Lucille Peters, both of Chicago, July 5.

Deaths

Frederic M. Strouse ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1885; assistant professor of laryngology, Graduate School of Medicine of the University of Pennsylvania; member of the American Academy of Ophthalmology and Oto-Laryngology; aged 66; died, August 4, in the Atlantic City (N. J.) Hospital, of injuries received when he was struck by an automobile.

Alfred Erwin Comstock ⊕ St. Paul; Hahnemann Medical College and Hospital, Chicago, 1899; formerly secretary of the Minnesota State Board of Medical Examiners; served during the World War; on the staffs of the Ancker Hospital, St. Luke's Hospital and St. Joseph's Hospital; author of "Some Experiments with Paraffin"; aged 58; died suddenly, July 24, of cerebral hemorrhage.

William Jacob Rideout ⊕ Freeport, Ill.; Keokuk (Iowa) Medical College, 1892; member of the American Academy of Ophthalmology and Otolaryngology and the American College of Surgeons; served during the World War; on the staff of the Evangelical Deaconess Hospital; aged 61; died, July 25, of heart disease.

Anton John Beyer, Carroll, Iowa; Wisconsin College of Physicians and Surgeons, Milwaukee, 1900; member of the Iowa State Medical Society; past president of the Carroll County Medical Society; for many years county coroner; on the staff of St. Anthony's Hospital; aged 62; died, July 10, of angina pectoris.

Frank Riecker Lyne, Chagrin Falls, Ohio; Western Reserve University School of Medicine, Cleveland, 1922; member of the Ohio State Medical Association and the Society of American Bacteriologists; on the staff of the Fairview Park Hospital, Cleveland; aged 32; died, July 19, of a self-inflicted bullet wound.

Robert Henry Dinegar ⊕ Albany, N. Y.; Medical Department of the University of the City of New York, 1892; member of the American Roentgen Society and the Radiological Society of North America; on the staff of St. Peter's Hospital; aged 59; died, July 29, of heart disease.

John Quincy Davis, Indianapolis; Medical College of Indiana, Indianapolis, 1899; at one time assistant professor of gynecology, Indiana University School of Medicine; formerly on the staff of the City Hospital; aged 56; died, July 26, of a self-inflicted bullet wound.

Joseph Cornelius Inman, Jr., Chattahooche, Fla.; University of Virginia Department of Medicine, Charlottesville, 1925; member of the Florida Medical Association; on the staff of the Florida State Hospital; aged 30; was found dead, August 9, with a gunshot wound.

George R. Shenk, Reading, Pa.; Jefferson Medical College of Philadelphia, 1889; member of the Medical Society of the State of Pennsylvania; formerly on the staff of St. Joseph's Hospital; aged 61; died, July 7, of chronic nephritis and arteriosclerosis.

Edgar Vernon Berry, Newcomerstown, Ohio; Ohio Medical University, Columbus, 1903; member of the Ohio State Medical Association; served during the World War; formerly county health commissioner; aged 52; died, July 22, of heart disease.

Henrietta Matilda Dougherty-Trexler, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1890; member of the Medical Society of the State of Pennsylvania; aged 63; died, July 24, of cerebral thrombosis.

Mollie King ⊕ Union City, Ind.; Indiana University School of Medicine, Indianapolis, 1915; member of the Associated Anesthetists of the United States and Canada; aged 42; died, July 18, of subacute endocarditis.

Charles Ewing Dyer, Majestic, Ky.; University College of Medicine, Richmond, 1904; member of the Medical Society of Virginia and the West Virginia State Medical Association; aged 50; died, August 28.

Jay Philon Whitney, Vinton, Iowa; Rush Medical College, Chicago, 1883; member of the Iowa State Medical Society; formerly member of the school board; aged 68; died, July 17, of cerebral hemorrhage.

Maurice Leahy ⊕ Tiffin, Ohio; University of Wooster Medical Department, Cleveland, 1878; Bellevue Hospital Medical College, New York, 1883; aged 75; died, July 19, of coronary thrombosis.

James Henry McCulloch, Checotah, Okla.; University of Louisville (Ky.) School of Medicine, 1902; member of the Oklahoma State Medical Association; aged 61; died, May 28, in Tulsa.

John Thomas Brown, Paris, Ky.; Rush Medical College, Chicago, 1889; member of the Kentucky State Medical Association; aged 65; died, August 2, of diabetes mellitus and nephritis.

Eli John T. Paxton, Rushville, Ind.; Miami Medical College, Cincinnati, 1893; member of the Indiana State Medical Association; aged 67; died, July 27, of arteriosclerosis.

Marcelo Eloriaga y Mendoza, Manila, P. I.; University of St. Thomas College of Medicine and Surgery, Manila, 1890; aged 65; died, March 4, of pulmonary emphysema.

Elias S. Jackson, New York; Columbia University College of Physicians and Surgeons, New York, 1898; aged 59; died, August 2, of chronic nephritis and myocarditis.

Edwin Christian Schmitt, Monrovia, Calif.; Rush Medical College, Chicago, 1917; aged 42; died, June 22, of chronic pulmonary tuberculosis and acute poliomyelitis.

John Frederick Russ, Blue Earth, Minn.; State University of Iowa College of Medicine, Iowa City, 1893; aged 63; died, August 13, of carcinoma of the stomach.

Percy Francis Kearney ⊕ San Francisco; University of Minnesota Medical School, Minneapolis, 1904; aged 52; died, August 11, of cerebral hemorrhage.

Michael A. Serritella ⊕ Chicago; Chicago College of Medicine and Surgery, 1916; aged 42; died, August 12, of a self inflicted bullet wound.

Marshall James Mosher, Waltham, Mass.; University of Vermont College of Medicine, Burlington, 1889; aged 69; died, March 22.

Uriah Burton Murray, Los Angeles; Jefferson Medical College of Philadelphia, 1883; aged 82; died, June 16, of diabetes mellitus.

Isaac S. Dunham, Cincinnati; Medical College of Ohio, Cincinnati, 1886; aged 71; died, August 14, of chronic endocarditis.

Jefferson D. Carpenter, Frisco, Texas; Louisville (Ky.) Medical College, 1885; aged 69; died, July 18, of myocarditis.

Daniel C. Adams, Aurora, Mo.; Ensworth Medical College, St. Joseph, 1895; aged 59; died, March 8, of chronic myocarditis.

Bureau of Investigation

TWO MINOR MAIL-ORDER FRAUDS

Chinese Herb Company of San Francisco and Webb Company of Springfield, Ill., Debarred from the Mails

CHINESE HERB COMPANY.—This company is said to have been operated by one Lou Wing, who also used the name Lau Yit Cho. Wing was in the business of selling "herb treatments" through the mails for the alleged cure of practically all diseases and ailments. He imported the herbs from Shanghai and mixed them himself. His claims for the alleged curative value of the herbs were based on statements of persons who used them.

Each "treatment" cost $10, regardless of the disease or its mildness or severity. The treatment consisted of seven separate packages of herbs, roots and barks. The instructions stated that each day the contents of one package were to be boiled with four or five cups of water for about one-half or three-quarters of an hour. The liquid was to be strained and drunk while warm.

Analysis of the so-called treatments by the federal chemists showed the decoctions to contain starch, tannin and emodin, or, in some cases, starch, tannin and saponin. Traces of alkaloids were found in some of the mixtures but in such minute quantities as to be without any therapeutic action. About the only physiologic effect that these decoctions had was that of producing a bowel movement. The treatments were sold as cures for syphilis, cancer, gonorrhea, valvular heart disease, diabetes and various other conditions.

Lou Wing swindled his public by the usual medical mail-order method—that of using newspapers. He carried advertisements in about fifteen papers published in English, Italian, Portuguese and Greek. On July 19, 1930, Judge Horace J. Donnelly, Solicitor for the Post Office Department, recommended to the Postmaster General that a fraud order be issued in this case, because it was a scheme for obtaining money through the mails by means of false and fraudulent pretenses. Postmaster General Brown on July 23 issued such an order.

WEBB COMPANY.—This concern, operated from Springfield, Ill., was a trade name under which one K. E. Webb operated. Webb's business was that of selling through the mails a mechanical device called the "Adjustor," sold under the claim that it would develop the male sexual organ. According to the Post Office report, Webb advertised in the *Police Gazette* and also mailed folders, pictures of the device and form-letters to prospective victims. The postal authorities declared that the device would not permanently restore lost erectile power, nor develop the natural powers of the organ, nor would it restore youthful vigor, nor make old men "as good as new." Judge Donnelly, Solicitor for the Department, recommended on July 29, 1930, that a fraud order be issued and the mails were closed to this fraud August 1, 1930.

MORE MISBRANDED NOSTRUMS

Abstracts of Notices of Judgment Issued by the Food, Drug and Insecticide Administration of the United States Department of Agriculture

Fulton's Compound.—The John J. Fulton Company of San Francisco shipped in July, 1928, to Seattle a quantity of Fulton's Compound ℞ 1 and ℞ 2. The government chemists reported that government analysis showed it to consist essentially of sodium and calcium compounds, nitrates, sulphates, borates, extracts of plant drugs including bearberry, a laxative drug, licorice, salicylic acid, a trace of alkaloids, alcohol and water. The claims that Fulton's Compound ℞ 1 was a cure for Bright's disease and that Fulton's Compound ℞ 2 was a cure for diabetes were declared false and fraudulent, since the preparations contained no ingredients or combinations of ingredients capable of producing the effects claimed. The Fulton concern filed exceptions to the government's charge, the point of their argument being that the claims for curative effects, which appeared in the trade package, were not made directly by them but were merely claims that the company held had been made to them by physicians. Judge Netter, before whom the case was first tried, sustained the exceptions made by the Fulton concern, and an order was entered by the court dismissing the libel. Later, the government filed notice and petition for appeal and in June, 1929, the government's appeal came on for argument before the Circuit Court of Appeals of the Ninth District, Judges Rudkin, Dietrich and Wilbur sitting. In due time this court handed down an opinion sustaining pure food and drug officials and reversing Judge Netter's decision in favor of the quacks. In the opinion, Judge Dietrich brushed away the sophistries of the Fulton concern and stated, in effect, that while the Fulton concern did not itself state that its products would cure Bright's disease and diabetes, the quotations that they published, purporting to come from physicians, stating that these two nostrums would cure Bright's disease and diabetes, were obviously published by the Fulton concern for the purpose of misleading the public. To quote from the appellate court's opinion:

> "Their contention is that they have such letters or reports and that that fact constitutes a complete defense whatever may be the character of the drugs. But if, as is alleged, the drugs are worthless the proprietors cannot escape responsibility by hiding behind the phrase 'the doctors say.' . . . Deception may result from the use of statements not technically false or which may be literally true. The aim of the statute is to prevent that resulting from indirection and ambiguity, as well as from statements which are false. It is not difficult to choose statements, designs and devices which will not deceive."

The case was then remanded to the United States District Court for the Western District of Washington for trial. In September, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16387; issued December, 1929.*]

[The Fulton Company's quack remedies for renal disease and diabetes, respectively, used to be known as "Fulton's Renal Compound" and "Fulton's Diabetic Compound." Many years ago (Jan. 29, 1916), this department of THE JOURNAL showed the fraudulence of the claims made for these nostrums and proved that a number of persons who had given testimonials for these nostrums were dead. The article is reprinted in the pamphlet "Nostrums for Kidney Diseases and Diabetes," prepared and issued by the Bureau of Investigation. At the present time the Fulton concern is still doing business, but selling its alleged remedy for diabetes in capsule form under the name "Uvursin."]

Donnell's Indian Vegetable Oil.—C. K. Donnell, M.D., Lewiston, Maine, shipped into Massachusetts a quantity of Donnell's Indian Vegetable Oil that was declared misbranded. Incidentally, C. K. Donnell is the same individual referred to in two news items in THE JOURNAL, in which it was stated that the man had been convicted of manslaughter following the death of a woman as the result of an illegal operation. In July, 1929, the State Board of Registration and Medicine in Maine revoked Donnell's license to practice medicine. The federal chemists reported that analysis of Donnell's Indian Vegetable Oil showed it to consist essentially of cottonseed oil containing volatile matter, including over 22 minims of chloroform to the fluid ounce, together with oil of peppermint and camphor. The therapeutic claims for the product, to the effect that it was a remedy for boils, piles, earache, toothache, diphtheria, pneumonia and various other conditions, were declared false and fraudulent. In March, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16394; issued December, 1929.*]

Hyland's 14.—The Standard Homeopathic Company of Los Angeles shipped to Salt Lake City in February, 1926, a quantity of Hyland's 14 for colds and grippe which was declared misbranded. The federal chemists reported that it consisted essentially of milk sugar, with traces of potassium iodide and extracts of vegetable drugs including gelsemium. The claim that this was a remedy for influenza was declared false and fraudulent, and in May, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16534; issued March, 1930.*]

Correspondence

GYNERGEN SANDOZ

To the Editor:—The attention of the Medical Research Council (Great Britain) has been drawn to a misleading advertisement, involving misuse of their name, which has been given currency on the American continent in respect of a preparation of ergotamine tartrate known as Gynergen "Sandoz." This advertisement states that "The Pharmaceutical Society of Great Britain, after consultation with the Medical Research Council, adopted Gynergen as the standard for ergot, thus making it the acknowledged leader in this field." This statement is not true.

The Medical Research Council desire to make it plain that they never at any time concurred in, or were consulted about, the adoption of this preparation as a standard. The suggestion made with reference to the council is therefore entirely without foundation, and any statement implying their approval is a gross misrepresentation.

Further, the current official publications of the Pharmaceutical Society of Great Britain state expressly that for ergot "the standard is a sample of ergotoxine phosphate which is kept in the dark in vacuo over phosphorus pentoxide." The adoption by the society of this standard, in place of a sample of ergotamine tartrate, was also announced three years ago in a paper by Burn and Ellis (*Pharmaceutical Journal* **118**:384, 1927), which constituted a report to the chairman of the International Conference on the Biological Standardisation of Certain Remedies.

WALTER M. FLETCHER,
Medical Research Council,
38 Old Queen Street,
Westminster, S. W. 1,
London, England.

WHY NOT SIMILAR SCHOOLS FOR THE CAUCASIAN?

To the Editor:—In THE JOURNAL, June 7, page 1849, is an account of the new Meharry Medical School at Nashville, in which one significant and interesting point is emphasized. Meharry, which has long had a reputation for good and faithful work in the education of Negroes, will have this new plant for 225 medical students, 150 dental students and 100 pharmaceutic students and there will be a hospital of 150 beds. The funds for this institution have been furnished largely by the General Education Board, the Julius Rosenwald Fund, Mr. George Eastman and Mr. Edward Harkness, all old and tried contributors to wise philanthropy. The interesting point in this statement is that there seems to be a departure from established policy, at least from that of the General Education Board, as respects this institution, for the account says: "Meharry's efforts will be directed to the training of the Negro youth in the fundamentals of medicine, dentistry, pharmacy and nurse training, and [I am underscoring] *no attempt will be made at elaborate work such as research.*"

Why cannot some institutions be endowed with a similar policy for the training of white physicians? Of course this policy is the tacit policy of many institutions now; they are trying to train physicians for the practical work of medicine; but none is so bold as to announce it frankly. The attitude is that medicine must be taught by research, not, as it should be, that in education research is a by-product. Particularly have the foundations insisted on this policy in the institutions that they have fathered. Is there now a change in their attitude? Surely the policy at Meharry is sound or they would not support it with their money. Is it too much to hope that there will be adoption of the same sort of attitude toward those medical schools which should be bending their energies directly to the training of physicians?

WILLIAM ALLEN PUSEY, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SKULL FRACTURE IN CHILDBIRTH

To the Editor:—The roentgenogram taken of a baby whom I have been seeing since shortly after birth (April 19) reveals a fracture such as I have never previously seen nor can I find reference to one. I am interested in the probable prognosis. The mother was a primipara with a contracted pelvis who had been scheduled for cesarean section. About one month prematurely, she came into the hospital in active labor with the feet presenting. There was a great deal of difficulty in delivering the head until a second physician exerted pressure on the mother's abdomen, causing the head to be delivered suddenly. The birth weight was 5 pounds 10½ ounces (2,565 Gm.). During the first two days the baby had several periods of cyanosis. There were also two occasions when the nurse thought that the limbs were rigid, but I never saw this. The baby has gained readily and since the first few days has nursed well. The second day it was noted that the baby's head was markedly retracted. This retraction has continued but has lessened slightly. It has always been possible to accomplish flexion of the neck with moderate force. During her stay in the hospital, it was possible readily to feel the outlines of the floating piece of bone in the hematoma in the occipital region. Now the piece seems fairly well fixed, but the outline of the skull is not smooth. I have never made out any abnormal reflexes.

I shall be grateful for any help you can give me with any of the questions. If you should print any of this letter, please omit my name.

M.D., Iowa.

ANSWER.—Fractures of the skull bones during delivery are relatively infrequent, but aside from the intentional injuries, as in craniotomy, they may result from spontaneous deliveries, breech extractions, versions and forceps deliveries. They more commonly occur as depressions of the parietal or frontal bones, which injuries are not as a rule associated with serious intracranial injury. These may be elevated by special instruments for using traction on the depressed area of bone. Spontaneous recovery may take place or the child may live with a more or less disfiguring depression of the skull. Naturally, serious intracranial injury or hemorrhage with disability or death of the infant may be associated with this type of injury. Definite fractures and fissures of the skull may occur in the types of delivery mentioned and may involve the inner as well as the outer table of bone. They may be single or multiple. Hemorrhages may occur at various levels with hematoma formation. The membranes of the brain may be torn, and cerebrospinal fluid and brain substance may extrude, forming pseudomeningocele and hernia of the brain. These fractures occur more frequently in the calvarium and more commonly extend radially from the eminence of the frontal and parietal bones. Fractures of the base of the skull are rare and the usual type consists of the separation of the condylar and supra-occipital parts of the occipital bone. This is serious as the medulla is apt to be involved by trauma or by hemorrhage. Fractures of the bones of the face also occur but generally from artificial deliveries of some type.

It is probable that in the case described there was some injury to the occipital margin of the parietal bone which broke off a fragment of the outer table of the latter bone. There was also apparently some hematoma formation. It is probable from the statement made that there was insignificant intracranial injury and it is unlikely that, with an infant otherwise apparently normal several months after delivery, any serious consequences will develop. The fragment seems to be healing in place and should doubtless be left undisturbed. This citation illustrates one of the dangers of the use of suprapubic and fundal pressure for the delivery of the aftercoming head. If used at all, it should be more with the idea of securing flexion of the head by manipulation than with the thought of forcing the head through the bony pelvis. One always should have the option of using forceps to the aftercoming head, which is valuable in preventing injuries to the base of the brain and the cervical cord, which frequently result from delivery by traction on the neck.

TREATMENT OF EYES IN TABOPARESIS

To the Editor:—A woman, aged 41, has taboparesis. Prior to using tryparsamide, I had a complete eye examination made by a reputable eye man with the following result: O. D. 20/32 + .50 + .5. c. axis 180. The pupil is not a true Argyll Robertson pupil but I believe that it will be soon. Disk hyperemia and swelling are indicative of a preoptic nerve infection. The left eye is the same as the right eye except that swelling and hyperemia of the disk are more marked. I recommond not using arsenic preparations. Will you kindly outline what treatments this patient should have in order that her eyes will not be affected more than they are at present? If published kindly omit name of town and my own name.

M.D., Ohio.

ANSWER.—It is believed by ophthalmologists that, in the presence of hyperemia or swelling of the optic disk or of definite contraction of the visual field, the use of the arsenical preparations should be avoided. Definite proof as to resultant harm to the optic nerve is lacking, but the clinical evidence is rather strong. Therefore, it is preferable to use mercury and the iodides in the case here described until such time as the optic nerve head presents a normal appearance and repeated examinations of the visual fields reveal no positive contraction. When such negative ophthalmic observations are reported, tryparsamide or other arsenical preparations may be used with safety.

DEMONSTRATION OF LYMPHATIC SYSTEM IN CADAVERS

To the Editor:—Could you suggest the best method of injection or other means of demonstrating the lymphatics in human cadavers? Any references, preferably in English, on this subject will be appreciated. Please omit name.

M.D., Colorado.

ANSWER.—Because of valves that permit of flow in lymphatic vessels only toward the superior aperture of the thorax, where these vessels terminate by joining the great veins through valve-guarded openings, the lymphatic vessels can be satisfactorily injected only by way of the lymph capillaries.

These are, of course, too small to permit of connecting a cannula with an individual capillary. The method adopted is that of inserting a fine needle, either glass or steel, into the tissue in which it is desired to demonstrate lymphatic vessels. The plane in which it seems probable that plexuses of lymphatic capillaries may lie (as subserous, subepidermal or submucous) is selected and an effort made to shove the point of the needle along this plane for a centimeter or less. This, if successful, makes many openings in the walls of the capillary vessels. The needle is then withdrawn for a short distance and the injecting fluid allowed to run in under gentle pressure. The fluid finds the openings in the vessels and runs into them and through them to the larger lymphatics.

The fluids that have been found to give the best results are mercury and Gerota's fluid. The latter is much better for most purposes. It consists of:

Prussian blue (as used for oil paintings)	2
Turpentine (pure)	3
Rub up thoroughly in a porcelain mortar and add	
Ether (sulphuric)	15

These are thoroughly rubbed up in the mortar. The fluid is then filtered through two layers of fine linen and injected at once. For injection, it is desirable to use a method by which gentle pressure can be evenly maintained or regulated.

Gerota's paper appeared in the *Anatomische Anzeiger* in 1896. Cecil H. Leaf's English translation of the section on lymphatics of Poirier, and Charpy's Anatomy, London, Constable & Co., may be consulted.

USE OF COTTON TAMPON IN PLACE OF PAD DURING MENSTRUATION

To the Editor:—There is a cotton pack or tampon, marketed by a firm in Chicago and put out for use by women as a "sanitary napkin," in place of the usual type such as "Kotex." The idea is to insert one in the introitus and the advantage claimed is the added comfort, lack of odor, and simplicity of use. They come in a sterilized pack in a glazine covered box. Of interest to the medical profession is whether or not there are any disadvantages such as might follow the blocking of the discharge, or perhaps setting up an irritation. I should appreciate your opinion.

G. D. GUILBERT, M.D., Waterville, Minn.

ANSWER.—The cotton pack or tampon mentioned can do practically no harm but it can be used by only a limited number of women. It may be useful for women who have a scanty menstrual flow but it is doubtful whether many women who have a moderate or profuse flow will care to carry around a large number of these tampons and also be willing to risk soiling their clothes. Unless the tampon is actually inserted into the lower end of the vagina it may readily slip out of place. Furthermore, if not placed properly, it may be irritating. The only reason this cotton pack would have less odor than any other pack or pad is that it is smaller. There are many women who for years have inserted small cotton pledgets into the lower end of the vagina during the menses and at other times, and no bad effects have been observed. Many women are afraid to use cotton pledgets in this way because they fear there may be difficulty in removing them. The string attached to the pack may overcome this fear. Perhaps toward the latter part of the menses, when there is less flow, such a tampon may be more agreeable than a regular pad. This may be especially true in hot weather.

USE OF ACRIFLAVINE HYDROCHLORIDE

To the Editor:—Will you kindly give us the present status of acriflavine hydrochloride or acriflavine base in the treatment of undulant fever and the method of administration?

O. C. VERMILYA, M.D., Fremont, Ohio.

ANSWER.—This method of treatment is still in the experimental stage; but, in view of the fact that it has given encouraging results in a few cases and that no other effective treatment against *Brucella abortus* infection is known, it might be worth while to use it in such cases. Hoffman (THE JOURNAL, June 29, 1929, p. 2169) administered intravenously acriflavine base in doses of 0.1, 0.2, 0.3 and 0.4 Gm. at intervals of two or three days. He emphasizes the importance of slowness of injection, as he found that the slower the rate of injection the less the resulting distress. The report of the A. M. A. Chemical Laboratory on the purity of the various brands of acriflavine hydrochloride and acriflavine base was commented on editorially in THE JOURNAL, Aug. 31, 1929, p. 695.

DIAGNOSIS OF ANEMIA

To the Editor:—Please inform me of the relative importance attached to the hemoglobin content and the red cell count in blood examination. For instance, I have a patient with hemoglobin, 75 per cent; erythrocytes, 2,800,000, no unusual forms; leukocytes, 3,100, with 55 per cent lymphocytes. Is this anemia of either moderate or sever type and would it be likely to cause constant tiredness and feeling of "all in"? Please omit name.

M.D., California.

ANSWER.—The account given here resembles that of a primary anemia. The 75 per cent hemoglobin, however, unless it is inaccurately measured, is much too high. This anemia should be labeled as a severe anemia and it is most likely a factor in the constant tiredness and the feeling of being "all in." It should be treated on the basis of a primary anemia unless some other cause for it is found.

BRONCHOPULMONARY SPIROCHETOSIS WITH TUBERCULOSIS

To the Editor:—A woman, aged 35, has incipient tuberculosis. The organisms *Castellanis spiralis-bronchialis*, the fusiform bacillus and the spirillum of Vincent's angina are constantly present in the sputum. I feel that they are retarding the cure of her tuberculous infection and wish to inquire about the presence of either one of these organisms. Please omit name.

M.D., Michigan.

ANSWER.—Evidently this is a condition of bronchopulmonary spirochetosis complicating pulmonary tuberculosis. The presence of these organisms is probably due to an associated condition, such as bronchiectasis, pulmonary abscess or gangrene, aspiration of a foreign body, or neoplasm; and it is probably the presence of some such condition that interferes with the cure of the tuberculous infection. Courses of neoarsphenamine in moderate doses (from 0.4 to 0.6 Gm.) given intravenously at weekly intervals four or five times may be of value, when employed in addition to the ordinary rest and hygiene employed in tuberculosis. In advanced tuberculosis, arsphenamine is contraindicated.

DANGER TO EMPLOYEES FROM EXPOSURE TO X-RAYS

To the Editor:—Is a young woman working constantly at her desk, which is in a room directly under that in which a busy roentgenologist takes his pictures, likely to be harmed in any way by the rays? The office building is new and modern, has ceilings ten or twelve feet high, and heavy hardwood floors covered with linoleum. Please omit name.

M.D., Massachusetts.

ANSWER.—Assuming that the young woman sits directly under the x-ray tube, that the ceiling is composed of hardwood only, without cement or plaster, and that the distance from the x-ray tube is twelve feet, she would theoretically get a maximum of one twenty-fifth of the radiation administered in the room above while she is sitting beneath the x-ray tube. However, the hardwood has some filter value; the linoleum also acts as a sort of filter, and the plaster of the room below also has some

filter value. If the floor is of concrete, then the filter is greatly increased and the amount of radiation reaching the young woman is almost negligible.

Under the circumstances it would only be fair and safe to suggest that the radiologist put a sheet of 1 millimeter of lead or of lead-rubber on the floor beneath the radiographic instrument so as to cut off all direct radiation. The indirect radiation is negligible under the circumstances of this case. If the floor is of concrete in addition to the hardwood, it will not be necessary to give any more thought to the matter.

DISSEMINATED SCLEROSIS

To the Editor:—My sister-in-law, an unmarried girl, aged 25, was diagnosed five years ago as having disseminated sclerosis. Since that time she has followed the usual course with remissions and exacerbations and has been treated by several specialists with medication and physical therapy. The last two years she has had no treatment but has followed Christian science. Lately, during a remission in which she suffered from severe ataxia of the right arm and leg and to a less extent of the right leg, diplopia, an ironed-out countenance and partial loss of memory with some emotional symptoms, she has lost faith in Christian science and is willing now to try pretty nearly anything. Is the serum treatment lately used in these cases of benefit? If so, where could it be obtained by a physician practicing in Ottawa and how should it be administered? What other medical or physical therapeutic measures could be undertaken with the hope of at least temporary improvement? Are there any of the Canadian or American spas which offer anything of value in the treatment of disseminated sclerosis? For the past six weeks, she has been taking liver extract, which at first seemed to be of benefit. About 1915, I believe it was, she passed through a severe attack of typhoid and later was operated on for empyema of the left side of the chest, from which diseases she apparently made a complete recovery. These are her only severe illnesses outside of her present one. Any information you can give me with respect to the treatment of this case with a view to temporary relief at least would be greatly appreciated. Please omit name.

M.D., New York.

ANSWER.—The large list of therapeutic agents that have been used in the treatment of patients with disseminated sclerosis is eloquent of the fact that nothing has as yet been established which offers any certainty of relief. The most recent serum to be offered is said to be prepared from an organism obtained from the spinal fluid of persons suffering from this disease. It is too recent to permit any judgment concerning its effects, especially as the disease is characterized by spontaneous remissions. Whether this serum has been used in North America is unknown, but Sir James Purves Stewart, 8 Buckingham Street, Buckingham Gate, S. W. 1, London, England, can supply information concerning the serum and the possibilities of securing it for use.

PREVENTION OF ERYSIPELAS

To the Editor:—A woman, aged 60, suffers from repeated attacks of facial erysipelas. The blood pressure and urine are normal, and outside of being slightly obese, her physical condition is normal. The attacks occur twice yearly, usually in the fall and the spring. Is there any way of relieving this situation by local or general treatment? Would sensitization tests be indicated? I would be glad to have any suggestions you might offer. Please omit name.

M.D., New Jersey.

ANSWER.—Sensitization tests are not indicated as there is no evidence that erysipelas is an allergic disease. It is, of course, well known that the disease is due to the streptococcus. It seems advisable to remove all foci of infection, since one of these may harbor this organism. Injections of specific biologic preparations may help to prevent recurrences.

DIARRHEA AFTER DRINKING COW'S MILK

To the Editor:—Some of my patients complain that ordinary cow's milk causes loose bowels when more than one glass is taken at a time. Now should milk that is good and fresh cause this trouble?

G. F. COCKER, M.D., New Orleans.

ANSWER.—Diarrhea is one of the most common symptoms of milk indigestion. It may be due entirely to digestive idiosyncrasies on the part of the patient. The milk may be curdled in large hard lumps in the stomach owing to the patient's gulping the milk down too hurriedly or to abnormal chemical conditions in the stomach. The milk may undergo abnormal fermentative or putrefactive changes in the bowel. The result cited is probably not due to milk allergy, as in such case one glass would be quite as liable to precipitate trouble as two glasses.

Slowly sipping the milk and mixing with it saliva or eating dry toast or crackers may improve matters. The use of finely curdled milk, such as buttermilk, Kazol or matzoon, may also do away with indigestion. Adding lime water in a liberal proportion is an expedient that frequently improves tolerance, though it has the disadvantage of making this food, which in its natural state is too watery for the adult, still more dilute. The fat of the milk may be responsible for the looseness of the bowels: in such a case, using skimmed milk only is the remedy.

USE OF HEARING DEVICES

To the Editor:—For some time I have felt that the acousticon used for the radio or talking pictures, where the volume of sound is great, is increasing my deafness. The new silver model with the small ear piece has seemed harmful at all times. I wonder whether an article I read in the *Scientific American* (I think) explains the cause. It says that any instrument that plugs the ear or in any way closes the air passage from the drum to the outer ear is injurious.

MRS. G. A. RISSER, St. Paul.

ANSWER.—An instrument that plugs a canal is injurious only when there is a condition in the ear that is in itself painful—such as boils, pimples, impacted wax, eczema or discharge—or when the instrument is not fitted properly and is worn too long. It is true that deafened people frequently tire of wearing hearing devices for long periods, but this is generally due to the fact that they have not become properly accustomed to their instrument or that they try too strenuously to hear when the instrument is being worn. All these things will adjust themselves when the patient becomes accustomed to the instrument.

HYPOSTHENURIA AND SEXUAL WEAKNESS

To the Editor:—A white man, aged 44, well nourished, a bachelor, is considering marriage but states that he lacks desire and has erections only occasionally. The genitals are normally developed. He states that he never has had venereal disease but has been bothered with "kidney trouble" for a good many years and the urine has been of low specific gravity for at least twenty years; but he has been well and able to perform his daily tasks right along (he is a clerk). The Wassermann reaction is negative. He inquires whether the use of aphrodisiacs, cantharides or phosphorus, would be advisable, or whether their regular use would be harmful either to himself or to his wife. Also he would like to have some expression as to how long he might expect to be able to perform the marriage act. He states that he never indulged in excessive venery and does not feel that he is old enough to have legitimately lost this function. As the examination shows him to be robust with the exception of the low specific gravity of the urine and he declares that his general health and strength have consistently been good, I am somewhat in a quandary. Please advise, omitting name and address.

M.D., Kansas.

ANSWER.—The permanence of low specific gravity of the urine indicates the presence of hyposthenuria, the reduced faculty of the kidneys to eliminate the proper amount of the metabolic end-products. In order to determine whether the retention concerns the organic or anorganic split products or includes both, it will be necessary to make a chemical examination of the blood and determine the percentage of sodium chloride in a twenty-four hour specimen of urine. Abnormally high figures of nonprotein nitrogen demonstrate retention of the urea compounds in the blood, while an abnormally high percentage of the blood indican points to chronic retention of organic end-products within the intermediate structures, though the nonprotein nitrogen may show normal values. Persistent hyposthenuria is quite often accompanied by deficiencies of sexual power. This is easily understood if one considers that impairment of proper urinary elimination is not solely due to renal deficiency but is also caused by a general asthenia a derangement of the proper coordination of all the somatic functions. Rational therapy should aim at restoring all these functions; special attention should be paid to the regimen, the administration of diuretics and the proper management of the cardiovascular system. The so-called aphrodisiacs, if of any effect at all, are apt to produce local irritation only without influencing the underlying causes. Their administration has to be counseled against. The long duration of abnormalities in the patient referred to makes the prognosis rather doubtful.

SPAYING THE DOG

To the Editor:—The method described in THE JOURNAL, June 14, p. 1938, for spaying a female dog is less simple than one suggested whereby sterilization is accomplished without the use of sutures. By means of a urethral or uterine sound introduced into the vagina, the uterus is strongly pushed against the abdominal parietes, where a small area is shaved, sterilized and incised. Through this minute opening, the protruding uterus and tubes are grasped with hemostatic forceps and by torsion are removed *en masse*, after which the incision is closed. This may not be a dependable description by a general practitioner, but the method as originally described (in some surgical work or medical journal appearing about the year 1919) was.

P. W. VAN METRE, M.D., Rockwell City, Iowa.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, Oct. 7 and 8, 1930. Sec., Dr. H. P. Mills, 14 N. Central Ave., Phoenix, Ariz.

COLORADO: Denver, Oct. 7, 1930. Sec., Dr. W. W. Williams, 224 State Capitol Bldg., Denver, Colo.

CONNECTICUT: New Haven, Oct. 11, 1930. Basic Science. Address State Board of Healing Arts, 1895 Yale Station, New Haven, Conn.

GEORGIA: Atlanta, Oct. 14-16, 1930. Sec., Dr. B. T. Wise, Americus, Ga.

IDAHO: Boise, Oct. 7, 1930. Comm., Hon. F. E. Lukens, Boise, Idaho.

ILLINOIS: Chicago, Oct. 14-16, 1930. Supt., Mr. P. B. Johnson, Springfield, Ill.

MICHIGAN: Lansing, Oct. 14-16, 1930. Sec., Dr. F. C. Warnshuis, 1010 Macabee Bldg., Detroit, Mich.

MINNESOTA: Minneapolis, Oct. 7 and 8, 1930. Basic Science. Sec., Dr. E. T. Bell, 110 Anatomy Bldg., University of Minnesota, Minneapolis, Minn. Reg. Minneapolis, Oct. 21-23, 1930. Sec., Dr. E. J. Engberg, 524 Lowry Bldg., St. Paul, Minn.

MONTANA: Helena, Oct. 7, 1930. Sec., Dr. S. A. Cooney, Power Block, Helena, Mont.

NEW HAMPSHIRE: Concord, Sept. 11-12, 1930. Sec., Dr. Charles Duncan, Concord, N. H.

NEW MEXICO: Santa Fe, Oct. 13-14, 1930. Sec., Dr. W. T. Joyner, 20-21 First National Bank Bldg., Roswell, N. M.

NEW YORK: Albany, Buffalo, New York City, Syracuse, Sept. 15-18, 1930. Mr. H. J. Hamilton, State Education Bldg., Albany, N. Y.

OKLAHOMA: Oklahoma City, Sept. 9, 1930. Sec., Dr. J. M. Byrum, Shawnee, Okla.

PORTO RICO: San Juan, Sept. 2-13, 1930. Sec., Dr. Diego A. Biascoechea, P. O. Box No. 804, San Juan, Porto Rico.

RHODE ISLAND: Providence, Oct. 2 and 3, 1930. Dir., Mr. L. A. Round, 319 State Office Bldg., Providence, R. I.

WISCONSIN: Milwaukee, Sept. 10, 1930. Special meeting for reciprocity cases. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse, Wis. Basic Science, Madison, Sept. 20, 1930. Sec., Prof. R. N. Bauer, 3410 Wisconsin Ave., Milwaukee, Wis.

WYOMING: Cheyenne, Oct. 6, 1930. Sec., Dr. H. W. Hassed, Capitol Bldg., Cheyenne, Wyo.

Arkansas May Examination

Dr. Sam J. Albright, secretary of the Board of Medical Examiners of Arkansas, reports the written examination held at Little Rock, May 13 and 14, 1930. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. Twenty-four candidates were examined and passed. Five physicians were licensed through reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Arkansas School of Medicine		(1930)	81, 81, 81.4, 81.8, 82, 82.2, 82.3, 82.9, 83.3, 83.3, 83.7, 84, 84, 84.5, 84.9, 85.1, 85.1, 85.2, 85.5, 85.5, 85.7, 86.1, 88.9
University of Tennessee College of Medicine		(1930)	84.7

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Illinois School of Medicine		(1915)	Illinois
Tulane University of Louisiana School of Medicine		(1928)	Louisiana
Washington University School of Medicine		(1924)	Michigan
Starling Medical College		(1880)	Ohio
Meharry Medical College		(1929)	Tennessee

Kentucky January to July Report

Dr. A. T. McCormack, secretary of the State Board of Health of Kentucky, reports a nongraduate as passing the examination and receiving a certificate limited to Bell County. Nineteen physicians were licensed through reciprocity with other states and 1 by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	
Nongraduate			*

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta College of Physicians and Surgeons		(1900)	Georgia
Rush Medical College		(1930)	Illinois
Indiana University School of Medicine		(1927)	Indiana
State University of Iowa College of Medicine		(1919)	Iowa
Johns Hopkins University School of Medicine		(1927)	Maryland
University of Michigan Homeopathic Medical School		(1901)	Oklahoma
Barnes Medical College		(1911)	Tennessee
Cleveland College of Physicians and Surgeons		(1910)	Ohio
University of Cincinnati College of Med.		(1929) (1929, 2 †)	Ohio
Western Reserve University School of Medicine		(1926)	Ohio
Meharry Medical College		(1921)	Tennessee
University of Tennessee College of Medicine		(1925) (1925-1928)	Louisiana Tennessee
Vanderbilt University School of Medicine		(1927)	Tennessee
University of Virginia Department of Medicine		(1927)	Virginia
University of Toronto Faculty of Medicine		(1919)	Canada

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
Cornell University Medical College		(1928)	N. B. M. Ex.

* Passed examination; certificate limited to Bell County under 1924 statutes.

† These applicants have received M.B. degrees and will receive M.D. degree on completion of one year's internship in a hospital.

Arizona July Examination

Dr. H. P. Mills, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, July 1 and 2, 1930. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Four candidates were examined and passed. Five physicians were licensed through reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern University Medical School		(1930)	94.9
University of Illinois School of Medicine		(1930)	91.3
St. Louis University School of Medicine		(1929)	88.4
Osteopath			77.1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of Medicine		(1917)	Colorado
Loyola University School of Medicine		(1916)	Illinois
University of Louisville School of Medicine		(1920)	Indiana
Columbia Univ. College of Physicians and Surgeons		(1921)	New York
Vanderbilt University School of Medicine		(1915)	Tennessee

Book Notices

THE CHEST ROENTGENOLOGICALLY CONSIDERED. By L. R. Sante, Professor of Radiology and Director of Department, St. Louis University Medical School. Volume XI. Annals of Roentgenology. A Series of Monographic Atlases. Edited by James T. Case, M.D. Cloth. Price, $20. Pp. 561, with 246 illustrations. New York: Paul B. Hoeber, Inc., 1930.

This is a work of large proportions and deserves considerable favorable comment. The extensive experience of Sante is reflected in many ways throughout the various chapters. One finds detailed information of routine procedures of studies of the air passages and special technics such as opaque instillations which have been recently advocated and which have added much to modern diagnostic methods. The author advocates the supraglottic technic for introducing iodized oils into the trachea and bronchi but gives minute details of other technics in the introduction of the contrast medium. The anatomic considerations of chest conditions are gone into in great detail, which greatly enhances the value of the book. The work abounds in excellent illustrations supplementary to the text. Each condition is thoroughly described in roentgenographic sequences of various stages from onset to termination. The thorough and systematic manner in which the various forms of pneumonia are treated is particularly commendable, and the various forms of tuberculosis are ably described and illustrated. Other of the numerous conditions found in the chest receive thorough treatment. This volume deserves a place on the shelves of all who are interested in roentgenology of the chest.

DIE NASE ALS REFLEXORGAN DES AUTONOMEN NERVENSYSTEMS. Von Dr. Alfred Koblanck. Mit einem Vorwort von Prof. Dr. Friedrich Matthaei, Priv.-Doz. an der Universität Hamburg. Paper. Price, 15 marks. Pp. 273, with 11 illustrations. Berlin: Urban & Schwarzenberg, 1930.

Nasal reflexes are here considered systematically and in detail. Beginning with the anatomy and physiology of the nasal mucous membrane, the author describes the nose as a reflex organ. Animal experiments are described and later nasal manipulation and treatments are recited showing their effect on the female genitalia, such as amenorrhea, dysmenorrhea and sterility; disturbances of the gastric and cardiac function; nervous disturbances; diseases of the respiratory tract; certain neuroses involving the function of the various extremities; the oral cavity; headache; migraine, and disease of the eyes and ears. The author made careful physical observations over a long period of years and carefully studied the histories of his cases, many of which are given fully. Credit is accorded men such as Fliess and others who did pioneer work, and to their

views are added many observations and conclusions drawn from them by the author. He calls attention to the fact that many gynecologists show great skepticism regarding the effect of local applications in the nose on menstrual and other pains. Basing his opinion on a vast clinical experience, the author feels that the proper intranasal treatments have a beneficial effect on a great variety of disorders. A bibliography is appended. The author's style is clear and his arguments are forceful. His attitude is an exceedingly fair one and his manner of expressing his results is modest in view of the favorable results he has noted. The whole subject is interesting and the book should prove valuable both to gynecologists and to rhinologists.

THE IMPROVED PROPHYLACTIC METHOD IN THE TREATMENT OF ECLAMPSIA. By Prof. W. Stroganoff. First English edition translated from the third German edition. Cloth. Price, $3.50 net. Pp. 154. New York: William Wood & Company, 1930.

This monograph represents the first English translation of an older edition by the same author. It has been thirty years since the method was first introduced, and during this time it has been tried in most of the large European and American clinics. Many modifications have been instituted and, as James Haig-Ferguson says in his introductory note, "A good deal of confusion has existed in the minds of many as to what the Stroganoff treatment really means. Its success depends greatly on meticulous attention to details which has not always been carried out with the accuracy upon which he so strongly insists." The method consists of: 1. Removal of all external irritations. The patient is placed in a dark room and all the niceties of nursing care are provided for her. 2. Introduction of narcotics, consisting of morphine hypodermically and chloral hydrate by the rectum. In eclampsia of average severity the patient should receive at least 112 grains (7.3 Gm.) of chloral hydrate and ½ grain (0.03 Gm.) of morphine in the first twenty-four hours, according to a well arranged schedule. The principle of the treatment is based on the fact that the fits are to be interrupted and narcotics pushed until this end is secured. Chloroform is administered freely by the open method for all examinations and manipulations of the patient. 3. Delivery by the most conservative method possible, depending on the condition of the patient. Rupture of the membranes is advocated to start labor in the majority of the patients. Labor may be terminated by forceps, version and extraction or by vaginal cesarean section, as indicated. 4. Upkeep of the main body functions, respiration, heart activity and skin. 5. Venesection—removal of as much as 400 cc. of blood when indicated for severe eclampsia.

The improved prophylactic method represents the old method in use for thirty years with few exceptions. Venesection and the unusual energetic use of narcotics in severe cases represent the only new recommendations. The fact that delivery is an efficient means of interrupting the fits is not a new one but serves as the basic principle for the more radical methods of treating eclampsia in vogue in many clinics. Chloroform cannot be considered harmless as Stroganoff would have us believe, in spite of the fact that he suggests that perhaps American chloroform is different from that obtained in Russia. He condemns cesarean section for the treatment of eclampsia except under unusual conditions, and yet several large clinics have reported unusually good results, provided the cesarean section is done under local anesthesia. He condemns forcible delivery rightly and proves by numerous statistics the dangers of this method.

Stroganoff's statistics over a period of years are good, although they have been equaled and even excelled in some American clinics. The last 310 cases were treated by the improved prophylactic method with a mortality of 8 per cent, although he gives a corrected mortality of 2.5 per cent by eliminating many eclamptic patients who developed other complications and died of them. One recent table of statistics reports 2,495 cases treated by the Stroganoff method by twenty-three authors with a mortality of 10 per cent. Some of the large clinics in the United States where a more active treatment for eclampsia is practiced show better results. However, as the author suggests, his method is applicable to the vast number of patients with eclampsia who must be treated elsewhere than in the few well equipped maternities.

The author has appended an excellent bibliography, giving the literature on the prophylactic method and an interesting history of the development of the method. This book is a distinct contribution to the American literature on an all important subject and should be read by everybody interested in maternal welfare.

RADIOGRAPHIE NÉPHRO-CHOLÉCYSTIQUE. Par M. de Abreu, de l'Institut Brésilien des sciences et de l'Académie de médecine de Rio. Paper. Price, 40 francs. Pp. 157, with illustrations. Paris: Masson & Cie, 1930.

This is a splendid pictorial exposition of the use of x-rays in diagnostic procedures in investigations of the gallbladder and the kidneys. The author advocates a special technic for differentiating shadows which, on ordinary postero-anterior projections, may be in either the gallbladder or the kidney. He presents a good case for this special technic and goes into considerable detail in diagrammatic explanations, showing in a graphic manner the values of exposures at different degrees of oblique angles. By such maneuvers the x-ray shadows present certain displacements which cause questionable densities to fall outside or inside the shadow outlines of the organ in question. There is little text, the author confining himself largely to the atlas form of presentation. The illustrations with explanatory diagrams are of a high order. On the especial subject which it treats the book has considerable value to the roentgenologist and others interested in pathologic conditions of the kidney and the gallbladder.

REPORTS OF THE COMMITTEE UPON THE PHYSIOLOGY OF VISION. II. Dark Adaptation. (A Review of the Literature.) By Dorothy Adams. Medical Research Council. Special Report Series No. 127. Paper. Price, 5s. net. Pp. 138, with 26 illustrations. London: His Majesty's Stationery Office, 1929.

In this review the subject has been thoroughly covered from the scientific literature of several languages and advantageously arranged in such fashion as to be invaluable to any worker in this field of ophthalmology or physiology. There is a complete bibliography containing more than 800 references. The report deals with the subject in the following way, being divided into sections on: the perception of achromatic light stimuli and the general course of dark adaptation; the perception of chromatic light stimuli; the regional variations in the sensitivity of the dark-adapted retina; dark adaptation of the fovea; visual acuity and dark adaptation; the difference threshold in relation to dark adaptation; factors causing individual variations in the course of dark adaptation; scotopic vision in relation to the stimulus; dark adaptation in pathologic conditions; dark adaptation in animals; structural changes accompanying dark adaptation; the chemical constitutions of the retina, and the chemistry of the visual purple; electrical responses of the dark-adapted retina; external stimuli of the eyeball; theories of dark adaptation. The work is systematic and thorough. It is a valuable addition to this field of ophthalmology.

ÉLÉMENTS DE PHARMACODYNAMIE GÉNÉRALE. Par Edgard Zunz, professeur à l'Université de Bruxelles. Paper. Price, 75 francs. Pp. 488, with 76 illustrations. Paris: Masson & Cie, 1930.

This is divided into twenty-one chapters of from four to fifty-six pages with, in one case, more than forty subdivisions, with a comprehensive and convenient index of subjects. The scope of the work and the use the author makes of the best literature places this among the major textbooks of pharmacology. As the title indicates, it treats of the elements of general pharmacodynamics; it does not present a systematic discussion of each drug on which the therapeutic use must be based, but from it one can learn much about the individual drugs that are used to illustrate the actions described. The index contains more than 250 references to opium and its derivatives.

The introduction defines many of the common terms used in pharmacology. Among the subjects treated are absorption, changes of drugs within the organism, actions on vascular walls, elimination, cumulation, antidotes, relation of chemical constitution to physiologic action, and standardization. This mode of treatment of the subject tends strongly to generalization concerning the actions of drugs, whereas rational therapeutics demands the intensive study of the details of actions of

every drug used. This tendency is manifest throughout the work, and the following is merely by way of illustration: The author states (p. 269) that if a substance is eliminated by the kidneys alone its action lasts until there remains in the organism an amount equal to the minimal effective dose; thus, supposing that a dose of 0.2 Gm. of theobromine is the least that induces perceptible effects, if one administers 2 Gm. of theobromine at one dose its action lasts until 1.8 Gm. has been eliminated. It is well known that the activity of a substance frequently depends on the concentration in which it reaches the tissue on which its action is exerted, while the duration of action appears to depend on the length of time that that tissue retains an effective amount, and there is no necessary correspondence between the rate of elimination from the tissues affected and that from the rest of the body. Many other generalizations are equally misleading. No man can write a textbook of this scope without making misleading statements, and while the impression should not be conveyed that this is not a useful book, it is only proper to point out some of its faults.

The text gives the names of many authors whose work is cited, and every chapter is followed by a bibliography, in most cases quite extensive; but one may look in vain in these bibliographies for more than half of the authorities cited in the text, in some cases even when whole tables are presented, supposedly verbatim. One table is given in a way to mislead, since an explanation in the original text serves as a caution against accepting some of the figures without reserve; the table is not even reproduced correctly (p. 238), and in addition there is a glaring typographic error which reduces the table to nonsense for those who are not familiar with that particular type of work. The bibliography at the end of the chapter contains no reference to the authors of the table, nor does the bibliography contain a reference to the paper in which the reviewer himself is quoted as authority for a statement which he never made, but quite the contrary. It is only fair to state that this fault, with reference to textbook bibliographies, is by no means limited to Zunz's work, but it is peculiarly annoying in this case, in which so many references are given. The proof-reading of the whole work shows extraordinary care in spite of the error mentioned. The work is useful to supplement the study of systematic pharmacology, but it in no way replaces the better textbooks now in use in the United States.

DAS LYMPHAEMOIDE DRÜSENFIEBER. Von Dr. E. Glanzmann, Privatdozent für Kinderheilkunde an der Universität Bern. Paper. Price, 12 marks. Pp. 235, with 8 illustrations. Berlin: S. Karger, 1930.

This monograph is based on a study of the history of glandular fever, with an excellent review of the extensive literature, together with the personal experience gained, not only from sporadic cases but from a careful study of a rather large epidemic. Associated with the author's views, which are substantiated by numerous case records, there is a critical review of previous and contemporary opinions on each phase of the subject. The clinical course of the disease is described in detail, with a discussion of the variations from the usual form. It is identified with infectious mononucleosis, and with reported cases of leukemia and pseudoleukemia in which the patients have recovered. It is characterized as a clinical entity first accurately described by Pfeiffer in 1889 and probably by Filatow somewhat earlier. These opinions were discounted by later writers until more recent years, when the study of hematology reasserted the fact that glandular fever was not a symptom complex occurring in nasopharyngeal disease and throat infections, but, in the opinion of the writer, a distinct clinical entity usually beginning with a throat infection, and consisting essentially of a disease of the lymphatic system with swelling of the lymph glands, predominantly in the several regions, but always with some general enlargement, and often with increase in size of the liver and spleen. The fever is of varying type and duration; but the disease always presents a definite blood picture characterized by a lymphatic reaction in a leukocytosis. The majority of the cells are mononuclear and show some variation in type but can usually be identified as of lymphatic origin with a tendency to predomination of cells of the plasma cell variety. Glanzmann presents in this book an admirable piece of work showing most careful observation and detailed study of each of the many cases recorded. There is a large bibliography from which detailed references are made. If he does not succeed in convincing the reader that this is a disease entity, he most certainly must convince him that it is a definite systemic type of reaction which may result from infections of various types, all of which have the power of producing this constant and characteristic picture of lymphatic disease.

THE CLINICAL EXAMINATION OF THE NERVOUS SYSTEM. By G. H. Monrad-Krohn, M.D., F.R.C.P., Professor of Medicine in the Royal Frederick University, Oslo. With a foreword by T. Grainger Stewart, M.D., F.R.C.P., Physician to the National Hospital for the Paralyzed and Epileptic, Queen Square. Fifth edition. Cloth. Price, $2.50. Pp. 222, with 57 illustrations. New York: Paul B. Hoeber, Inc., 1930.

This book cannot possibly be praised too highly. The author has two rare qualities: to select everything essential to his subject and state it clearly and lucidly, and to omit everything not actually necessary. Each successive edition contains added descriptions of new diagnostic methods, but care has been taken to keep the book at just the right size to serve its purpose as a guide to clinical examination of the nervous system. The new features of this edition are descriptions of air injection by the ventricular and lumbar routes and of the use of hypertonic solutions as a means of reducing the intracranial tension and thereby rendering a dazed patient cooperative for a subsequent examination. The book is useful alike to practitioners and to students.

DIE ISAMINBLAUTHERAPIE DER BÖSARTIGEN GESCHWÜLSTE. Von Dr. Rudolf Roosen. Würzburger Abhandlungen. Band VI, Heft. 5. Von Prof. Dr. Joh. Müller. Paper. Price, 4 marks. Pp. 199-236. Leipzig: Curt Kabitzsch, 1930.

This report on the treatment of cancer with the vital stain tribetanaphthylpararosanilindisulphonate is an impartial review of the evidence of its value. It is a stain first produced for textiles and used by Ehrlich when he and his pupils were investigating the dyeing of living tissues. The entire body becomes blue when the dye is injected intravenously in sufficient quantities, and the dyeing apparently does not interfere with normal physiologic processes. Diseased tissue is more intensely and more quickly dyed than healthy structures. The usefulness of the dye in treating malignant tumors, tuberculous lesions and leukemia it is claimed is undoubted, but in order to form an opinion of the declarations made by the author as to the efficacy of the remedy the report should be read, as well as the articles in periodicals to which reference is made. How the dye is used, either alone or with intervening injections of neoarsphenamine, and where it may be obtained, are also explained.

TUMEURS MÉDULLAIRES ASSOCIÉES À UN PROCESSUS SYRINGOMYÉLIQUE. Par N. Jonesco-Sisesti. (Travail de la clinique neurologique de la Salpêtrière, Prof. G. Guillain). Paper. Price, 45 francs. Pp. 294, with 12 illustrations. Paris: Masson & Cie, 1929.

With the advancement of spinal cord surgery and the development of more precise indications and methods of radiotherapy, it is of practical importance to have more precise knowledge of the relationship between so-called syringomyelia and tumors of the spinal cord. By means of well studied personal clinical cases and anatomic investigations and review of cases from the literature the author makes clear the pathogenesis of cavity and tumor formation, the symptomatology, the differential diagnosis and the treatment. Dealing with such a specialized subject the book will be especially appreciated by neurologists, neurosurgeons and pathologists.

CLINICA QUIRURGICA. Tomo I. Por Pablo L. Mirizzi, professor titular de clinica quirúrgica de la Facultad de Medicine de Córdoba. Paper. Pp. 382, with illustrations. Córdoba, 1930.

The chapters in this first volume of clinical surgery are devoted to many subjects. Apparently there has been no endeavor to arrange the material systematically, and only the more common surgical conditions are discussed. Acute appendicitis, empyema, exophthalmic goiter, carcinoma of the stomach and diseases of other organs are included. The clinical and diagnostic features are emphasized, and some mention of treatment is made. There are two chapters dealing with plastic surgery. Bone and joint diseases are not mentioned.

Medicolegal

Death from Roentgen Burns

(Hess v. Rouse (Texas), 22 S. W. (2d) 1077)

The defendant, Hess, a physician, administered three roentgen treatments. The first was applied to his patient's abdomen. A few days later a treatment was applied to her back, followed in a few days by the third treatment, also to her back. In a short time, apparently after the last treatment, a third degree burn developed, covering an area of about 4 by 7 inches. The tissues under the burned area sloughed off "down to the lining of her intestines," and the patient died. Her husband and children brought suit. Judgment was rendered against the defendant for $8,467.50. He appealed to the Court of Civil Appeals of Texas, Austin, where the judgment was affirmed.

Physicians testified that a third degree burn is ordinarily the result of administering roentgen rays of too great strength, or not focused at the proper distance, or for too long a time; or of using the roentgen-ray machine without a proper filter; or at all events, of a failure of the physician to observe some established method or rule of administering roentgen therapy. Testimony was offered to show that occasionally a patient possesses an idiosyncrasy or supersensitiveness with respect to roentgen rays and is more liable to be burned than is the ordinary patient. The existence of an idiosyncrasy in the present case, however, said the Court of Civil Appeals, was fairly negatived through testimony showing that when an idiosyncrasy exists it extends alike to all parts of the body and is ordinarily detected in the first or second treatment. The deceased was burned from one of the treatments, but not from the other two. The evidence was sufficient, said the court, to warrant the jury in finding that the defendant failed to use the reasonable degree of care, skill and diligence in treating the deceased with roentgen rays that is ordinarily used by the average members of the medical profession in good standing in the community where the injury occurred, under the same or similar circumstances, and to warrant it in concluding that such failure was the direct and proximate cause of death. This, said the appellate court, is the test of liability in a case of this character.

The defendant moved for a new trial, alleging that he had discovered, after the trial, that another physician had applied "iodex" and "antiphlogistine" to the burn on the body of the deceased, applications contraindicated in roentgen burns and which if used to any great extent cause a breaking down of the tissues and lead to the death of the patient. The defendant, himself, however, treated the deceased until her death. Certainly, said the court, he should have detected any improper treatment by other physicians, who occasionally treated the deceased in his absence. The plaintiffs, when they started this suit, admitted that they had employed other physicians to treat the burn, and common reason should have suggested to the defendant that it was important for him to ascertain what medicine had been used by them. The evidence shows simply that the defendant did not exercise any degree of diligence to obtain such information. As one essential to granting a new trial on the ground of newly discovered evidence is that the party asking for a new trial could not have obtained such evidence by a reasonable degree of diligence before the trial, the trial court did not err in overruling the defendant's motion.

Stillbirth: Civil Liability for.—The plaintiff, then about five months pregnant, fell while getting off a street car. She injured her left knee and ankle and suffered pains in her back and abdomen. About four months later, she gave birth to a child, perfect, fully developed, and without signs of decomposition. It was stillborn, after an instrumental delivery. She thereupon brought suit against the railway company. The physician who attended her when she was injured and also when she gave birth to the child testified that the only way in which the injury could have had anything to do with the death of the child was, in his opinion, that it might possibly have produced a maldevelopment and in that way caused stillbirth. That, however, he admitted, was purely a matter of conjecture. He knew of no precedent for holding that the injury which the plaintiff received could have produced the condition that existed in this case, and the child be perfectly developed and stillborn four or five months after the injury. Another physician testified that such a condition would be impossible. Judgment was rendered, however in favor of the plaintiff, after the trial judge had instructed the jury, among other things, that if it found that the stillbirth occurred as the direct result of the injuries sustained, it might assess damages for such physical pain and mental anguish as the plaintiff suffered, if any, by reason of having given birth to a stillborn child. Elements of damage, said the St. Louis Court of Appeals, on appeal, cannot be submitted to the jury when there is absolutely no proof authorizing such submission and when objection is made. The evidence in this case did not authorize a submission of the plaintiff's right of recovery on account of physical pain and mental anguish suffered by giving birth to a stillborn child, four or five months after the injury, when the evidence disclosed that there was no recorded case of such an injury causing stillbirth under such conditions as existed in this case. To allow the jury to find such facts as an element of damage would be to allow it to speculate and would make such a finding purely a matter of conjecture. The judgment of the court below was reversed and the cause remanded.—*La Mear v. Wells (Mo.), 22 S. W. (2d) 876.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Chicago, October 27-31. Dr. W. P. Wherry, Medical Arts Building, Omaha, Secretary.

American Academy of Physical Therapy, Boston, October 22-24. Dr. Thomas L. Smyth, 111 North Eighth Street, Allentown, Pennsylvania, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Niagara Falls, Canada, September 15-17. Dr. James E. Davis, 1825 Geddes Avenue, Ann Arbor, Mich., Secretary.

American College of Surgeons, Philadelphia, October 13-17. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.

American Hospital Association, New Orleans, October 20-24. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

American Physical Therapy Association, Chicago, Oct. 6-10. Dr. C. C. Vinton, 1650 Broadway, New York, Secretary.

American Public Health Association, Fort Worth, Texas, October 27-31. Mr. Homer N. Calver, 370 Seventh Avenue, New York, Executive Secretary.

American Roentgen Ray Society, West Baden, Ind., September 23-26. Dr. John T. Murphy, 421 Michigan Street, Toledo, Ohio, Secretary.

Association of American Medical Colleges, Denver, October 14-16. Dr. Fred C. Zapffe, 25 East Washington Street, Chicago, Secretary.

Association of Military Surgeons of the United States, Washington, D. C., Sept. 25-27. Dr. J. R. Kean, Army Medical Museum, Seventh and B Streets, Washington, D. C., Secretary.

Central Association of Obstetricians and Gynecologists, Kansas City and Excelsior Springs, Missouri, October 9-11. Dr. E. D. Plass, University Hospital, Iowa City, Iowa, Secretary.

Colorado State Medical Society, Pueblo, September 9-11. Mr. H. T. Sethman, Metropolitan Building, Denver, Executive Secretary.

Delaware, Medical Society of, Dover, Oct. 14-15. Dr. W. O. La Motte, Medical Arts Building, Wilmington, Secretary.

Indiana State Medical Association, Fort Wayne, September 24-26. Mr. T. A. Hendricks, Hume-Mansur Bldg., Indianapolis, Executive Sec'y.

Kentucky State Medical Association, Bowling Green, September 15-18. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Benton Harbor, September 15-17. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.

Mississippi Valley Conference on Tuberculosis, Rockford, Ill., October 14-16. Dr. Robinson Bosworth, Box 1005, Rockford, Secretary.

Missouri Valley, Medical Society of the, Des Moines, Iowa, October 15-17. Dr. Joseph D. McCarthy, 107 South Seventeenth Street, Omaha, Secretary.

Nevada State Medical Association, Reno, September 26-27. Dr. H. J. Brown, Box 688, Reno, Secretary.

Oregon State Medical Society, Portland, September 18-20. Dr. F. D. Stricker, 301 Oak Street, Portland, Secretary.

Pacific Coast Oto-Ophthalmological Society, Victoria, B. C., Canada, September 4-6. Dr. Walter F. Hoffman, 817 Summit Avenue, Seattle, Secretary.

Pennsylvania, Medical Society of the State of, Johnstown, Oct. 6-9. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Utah State Medical Association, Salt Lake City, September 9-11. Dr. M. M. Critchlow, Boston Building, Salt Lake City, Secretary.

Vermont State Medical Society, Burlington, October 2-3. Dr. William G. Ricker, 33 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Norfolk, October 21-23. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Washington State Medical Association, Bellingham, September 9-11. Dr. C. H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Western Branch of the American Urological Association, Los Angeles, September 18-20. Dr. H. W. Howard, 193 Eleventh Street, Portland, Ore., Secretary.

Wisconsin, State Medical Society of, Milwaukee, September 10-13. Mr. J. G. Crownhart, 119 E. Washington Ave., Madison, Executive Sec'y.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

12: 1-298 (July) 1930

Tuberculosis in Jamaica. E. L. Opie and E. J. Isaacs, Philadelphia. —p. 1.

Comparative Study of Intestinal Protozoa of Wild Monkeys and Man. R. Hegner and H. J. Chu, Manila, P. I.—p. 62.

Epizootic Fox Encephalitis: I. General Description. R. G. Green, N. R. Ziegler, B. B. Green and E. T. Dewey, Minneapolis.—p. 109.

*Measurement of Skin Temperature in Relation to Sensation of Comfort. E. F. Ward, Baltimore.—p. 130.

Susceptibility of African Monkeys to Yellow Fever. J. H. Bauer and A. F. Mahaffy, Lagos, Nigeria, West Africa.—p. 155.

Filtrability of Yellow Fever Virus. J. H. Bauer and A. F. Mahaffy, Lagos, Nigeria, West Africa.—p. 175.

Ventilation and Respiratory Illness in Syracuse Schools: Analysis of Factors Affecting Criteria Used. F. Cole, D. D. Kimball, F. S. Lee, G. T. Palmer, E. B. Phelps, E. L. Thorndike, C.-E. A. Winslow, New York.—p. 196.

Id.: Rate of Air Flow and Room Temperature in Relation to Health of School Children. R. Cole, D. D. Kimball, F. S. Lee, G. T. Palmer, E. B. Phelps, E. L. Thorndike, C.-E. A. Winslow, New York.—p. 215.

Food of Mosquito Larvae (Culicidae). E. H. Hinman, Ithaca, N. Y. —p. 238.

*Effects of Ingestion of Tartrate or Sodium Aluminum Sulphate Baking Powders on Growth, Reproduction and Kidney Structure in Rat. J. F. Lyman and E. Scott, Columbus, Ohio.—p. 271.

*Effects of Habitual Use of Tartrate and Aluminum Baking Powders on Utilization of Food in Rat. R. M. Kraft, Columbus, Ohio.—p. 283.

*Effect of Dyes on Virus of Chicken Tumor No. 1. M. R. Lewis.—p. 288.

Giardiasis: Case. H. Tsuchiya and J. Andrews, Baltimore.—p. 297.

Skin Temperature in Relation to Sensation of Comfort.—Ward's experiments seem to indicate a definite relationship between the sensation of comfort experienced and the skin temperature measured in 159 observations on 4 subjects. While there is in general a relationship between these two factors, there are individual differences in the skin temperatures of different persons on the same day, and there are variations in the same individual on different days under like environmental conditions. The results obtained would seem to indicate that the temperature of the skin as measured over the forehead and carotid may be used as an index of the degree of comfort of the patient. While there are undoubted individual variations, the measurements show in general that an optimal sense of comfort is experienced when the skin temperature at these points lies between 33 or 34 C. An uncomfortable sensation of warmth is reached when the skin temperature rises as high as 35 to 36 C. On the other hand, uncomfortable sensations of cold are experienced when the skin temperature falls as low as 31 or 32 C. On the basis of these results, one might place the extremes of the comfort zone for the skin temperature of the forehead or carotid as lying between 31.5 and 35.5 C., a range of 4 C. with the optimum at 33.5 C. Beyond these limits, distinct discomfort is felt.

Effects of Sodium Aluminum Sulphate Baking Powder on Growth, Reproduction and Kidney Structure.—Lyman and Scott assert that the ingestion of sodium aluminum sulphate-calcium acid phosphate baking powder residue by white rats in varying amounts up to a dosage represented by approximately 2 per cent of the diet had no appreciable effect on the rate of growth, maximum adult size, longevity, reproduction and nonprotein nitrogen of the blood. They conclude, therefore, that it was without injurious effect. The ingestion of tartrate baking powder residue by white rats in varying amounts up to about 4 per cent of the diet had no marked effect on rate of growth, maximum size, longevity, reproduction and nonprotein nitrogen of the blood. They conclude, therefore, that it was without marked injurious effect. Post mortem examinations were held on all of the animals of the experiment. The microscopic examination of the kidneys failed to reveal any pathologic changes by which the kidneys of the various groups could be differentiated. Neither the length of time during which the feed was consumed nor the proportions of the ingredients of the food itself brought about sufficient change to warrant a pathologic diagnosis of any sort. The kidneys of albino rats, fed for a period of twenty-one months on a feed containing approximately 2 per cent of sodium aluminum sulphate-calcium baking powder, presented no gross or microscopic lesions whereby they could be distinguished from the kidneys of rats receiving the basic ration containing no baking powder residue.

Effect of Habitual Use of Aluminum Baking Powders on Utilization of Food.—White rats were fed by Kraft from an early age with and without baking powder residues. At the end of a fifteen months feeding period the utilization of the diets was measured by the conventional method for determining digestibility coefficients. This long continued feeding on diets that contained residues from tartrate or from sodium aluminum sulphate-calcium acid phosphate baking powders had no noticeable effect on the digestibility of the food constituents. There was no effect on the weight of air dry feces excreted; hence no cathartic action of the baking powder residues was evident.

Effect of Dyes on Virus of Chicken Tumor 1.—Lewis determined that the causative agent of the chicken tumor 1 may be inactivated in the tumor extract by a number of the common biologic dyes. Some of these dyes brought about an unfavorable hydrogen ion concentration in the solution containing the virus. Of those that did not produce an unfavorable hydrogen ion concentration, toluidin blue, eosin, erythrosin, phenol indophenol, and dichlorophenol indophenol exhibited great inactivating power on the virus. Toluidin blue inactivated the virus of the chicken sarcoma in solutions containing about 1 part of dye to 10,000 parts of a highly virulent tumor extract.

American J. Obst. & Gynecology, St. Louis

20: 1-152 (July) 1930

*Significance of Anterior Pituitary Hormone in Blood of Gynecologic Patients. C. F. Fluhmann, San Francisco.—p. 1.

Benign Uterine Bleeding, Wilfred Shaw's Groups. J. V. Meigs, Boston. —p. 15.

*Tubal Strictures and Localization by Means of Uterotubal Insufflation and Kymograph. I. C. Rubin, New York.—p. 28.

Reconstruction of Cervical Ligaments Following Complete Hysterectomy in 110 Cases. W. T. Kennedy, New York.—p. 51.

*Occurrence of Cancer in Uterine Cervical Stump After Supravaginal Hysterectomy. L. Branscomb, Birmingham, Ala.—p. 66.

Anemia in Pregnancy. A. First and L. Goldstein, Philadelphia.—p. 70.

Value of Routine Radiographic Examinations of New-Born, Based on Study of 702 Consecutive Babies. C. H. Davis and G. W. Stevens, Milwaukee, Wis.—p. 73.

Splenomegaly with Hepatic Cirrhosis (Banti's Syndrome) as Complication of Pregnancy: Case. H. C. Hesseltine, Iowa City.—p. 77.

*Hemangioma of Pelvic Connective Tissue. R. T. Frank, New York. —p. 81.

Menstrual Periods Induced in Ovariectomized Monkeys by Estrus-Producing Ovarian Hormone. E. Allen and D. D. Baker, Columbia, Mo.—p. 85.

Axial Rotation of Pregnant Uterus. D. Feiner and J. Kaldor, New York.—p. 88.

Trichomonas Vaginalis. H. D. Furniss, New York.—p. 93.

Postpartum Atresia of Vagina: Case. A. E. Kanter and A. H. Klawans, Chicago.—p. 95.

Abdominal Pregnancy with Diagnosis Confirmed by Uterogram: Case. G. R. Osborn, Tulsa, Okla.—p. 98.

Cesarean Section and Subsequent Labor: Cases. R. L. Grogan, Fort Worth, Texas.—p. 101.

Papilloma of Endometrium. W. A. Dafoe, Toronto, Ont.—p. 103.

*Method of Identifying New-Born Infants at Boston Lying-In Hospital. F. C. Irving, Boston.—p. 105.

Stethoscope for Auscultating Fetal Heart. M. Leff, New York.—p. 108.

Anterior Pituitary Hormone in Blood of Gynecologic Patients.—The presence of large amounts of the anterior pituitary sex hormone (or hormones) in the blood was determined by Fluhmann in 319 women by a method based on the Aschheim-Zondek "pregnancy test." The test proved negative under the following conditions: (*a*) at any stage of the cycle in women with a normal menstrual history; (*b*) in patients less than 40 years of age with anatomic pelvic lesions, such

as carcinoma cervicis uteri, fibromyoma uteri, pelvic inflammatory disease and glandular hyperplasia endometrii; (*c*) in patients with "hypo-ovarian" conditions, as manifested by short periods of amenorrhea, scanty regular menses, or persistently delayed menses. The patients with positive results could be classed into three categories: (*a*) During pregnancy, when the test is characterized by the "hemorrhagic cyst" and "luteinization" reactions. (*b*) In the presence of a total ovarian deficiency, when the test gave mainly the "ovulation" reaction. This group was represented by women following a complete operative extirpation of the ovaries, after radiation castration, and after the menopause. Some patients with prolonged periods of functional amenorrhea also probably belong to this category. (*c*) A group composed of women in the early stages of the menopause with irregular profuse periods, and a small number of younger patients with irregular (too frequent) menses or severe dysmenorrhea. The test, when positive, showed the "ovulation" reaction. The etiologic factor is not known, but the possibility that the symptoms may be the result of a "hyperpituitary" condition must be considered.

Localization of Tubal Strictures by Means of Uterotubal Insufflation and Kymograph.—Rubin avers that the method of uterotubal insufflation can determine the fact of tubal patency and of nonpatency. In the vast majority of the cases of nonpatent tubes it can render information as to the site of the obstruction at the uterine end or the fimbriated end and thus aid in a decision for or against operative intervention to open the tubes. With the help of abdominal auscultation and careful notation of the pelvic pain reaction during the examination it is often possible also to locate the tube which may be the seat of a permeable stricture. The diagnosis of bilateral permeable strictures is more difficult whether gas or iodized oil is used. With the aid of the kymograph certain alterations of tubal function, such as uterotubal spasm and those due to peritubal adhesions, are also readily diagnosticated.

Cancer in Cervical Stump After Supravaginal Hysterectomy.—Among 1,804 cases of cervical carcinoma Branscomb found forty-six cases of cancer in the cervical stump. In all instances the operation had been done for nonmalignant conditions; 33 for myomas, 8 for pelvic inflammatory disease, 1 for prolapse, 3 for causes not ascertainable, and 1 on account of an automobile injury. Thirty-seven of these patients had borne children and might have had trauma of some kind. The practical lesson to be drawn from this study, Branscomb says, is, first, that a thorough diagnostic exclusion of cancer either in the cervix or in the body of the uterus should be made as a preliminary to a supravaginal hysterectomy; and, secondly, that patients who have had such an operation should be kept under observation and instructed that discharge or bleeding is abnormal and that they should immediately seek medical advice on the first appearance of either of these symptoms.

Hemangioma of Pelvic Connective Tissue.—The case reported by Frank was one of an enormous subperitoneal cavernous hemangioma. Six years previously a similar but smaller and more localized mass was removed from the left broad ligament, together with the ovary and tube. Abdominal examination showed a mass arising from within the pelvis and reaching on the right side to the level of the umbilicus. This mass appeared continuous with the uterus. A smaller mass was felt on the left side just reaching the pelvic brim. The diagnosis of intraligamentous cysts or, less likely, a chronic stage of pelvic inflammatory disease (tubovarian) was made. Median subumbilical incision exposed a bluish red, polycystic edematous mass rising to the level of the umbilicus. The entire mass was subperitoneal, except anteriorly where it had apparently broken through the anterior culdesac and loosely attached itself to the posterior surface of the bladder and the anterior surface of the uterus. After the pelvis was cleared, the pelvic cellular tissue almost down to the perineum was plainly in view, apparently entirely freed from neoplasm. Convalescence was uneventful. Microscopically the tumor tissue consisted of a simple cavernous hemangioma, the septums consisting of loose, soft, edematous fibrillar connective tissue. In no area were malignant changes to be found nor did proliferation of the vessel endothelium occur.

Method of Identifying New-Born Infants.—The Boston Lying-In Hospital has instituted the use of the army aluminum identification disks, says Irving. As the disks come from the manufacturer, they have two holes punched in them and are stamped in pairs with serial numbers. At the time of delivery the mother's surname is cut on the back of each one of a given pair bearing on the other side the same serial number. When the baby is born, one of the tags is affixed to the infant and the other to the mother. Should there be more than one mother of the same surname in the hospital, this situation is taken care of by the serial numbers. The tags are inexpensive, indestructible and always legible, as the names and numbers are cut into their surfaces with dies. Any time the baby is brought to breast the mother may reassure herself that she has the right infant by comparing the serial number of her own tag with that of the baby. A method of identification is provided which is simple and positive.

Annals of Internal Medicine, Ann Arbor, Mich.

4: 1-112 (July) 1930

Colloids in Medicine. R. A. Gortner, St. Paul.—p. 14.
Cerebral Localization. L. J. Pollock, Chicago.—p. 21.
Psychologic Panel in Diagnosis and Prognosis. W. Freeman, Washington, D. C.—p. 29.
Gastro-Intestinal Troubles That Now Go Undiagnosed. W. C. Alvarez, Rochester, Minn.—p. 39.
Arteriosclerosis in Diabetes. E. P. Joslin, Boston.—p. 54.
*Unrecognized Hyperthyroidism Masked as Heart Disease. S. A. Levine, Boston.—p. 67.
Lead Poisoning in English Books of Trades. C. V. Weller, Ann Arbor, Mich.—p. 81.

Unrecognized Hyperthyroidism Masked as Heart Disease.—Levine calls attention to a group of patients usually treated for heart disease in whom the underlying cause is a latent and unrecognized hyperthyroidism. These cases are generally overlooked, even by most competent internists, for the common signs and symptoms usually found in typical exophthalmic goiter and toxic adenoma are not evident in these patients. The diagnosis is even more difficult in patients who have coexisting organic heart disease, such as angina pectoris, hypertensive heart disease or mitral stenosis. Of especial interest are those with typical anginal attacks in whom proper treatment of the latent hyperthyroidism results in a great reduction in the number of attacks, if not complete relief from symptoms. The diagnostic criteria are discussed and attention is directed particularly to certain points in the general appearance of the patient and in the physical examination that lead one to suspect the presence of a latent hyperthyroidism. Circulatory insufficiency is not a contraindication for surgery in the treatment of these patients, many of whom are relieved completely, and others much improved by subtotal thyroidectomy. A series of cases is reported, all of which had been treated for a considerable period of time for heart disease, but in each of which there was an unrecognized hyperthyroidism either as the sole cause of the trouble or as an additional burden on a heart already affected with some other organic lesion. In every case either complete cure or marked improvement was obtained when treatment was directed at the previously unsuspected thyroid gland.

Archives of Pathology, Chicago

10: 1-178 (July) 1930

Diet and Tissue Growth. H. T. Parsons, A. H. Smith, T. S. Moise and L. B. Mendel, New Haven, Conn.—p. 1.
Comparison of Intranuclear Inclusions Produced by Herpetic Virus and by Virus III in Rabbits. E. V. Cowdry, St. Louis.—p. 23.
*Addison's Disease Associated with Congenital Absence of Suprarenal Glands. E. H. Crosby, Albany, N. Y.—p. 38.
*Rheumatic Pericarditis with Polypoid Formations. M. G. Bohrod, Chicago.—p. 51.
*Periarteritis Nodosa: Case. W. B. Kountz, St. Louis.—p. 55.
Infarcts of Liver and Mechanism of Their Production: Case. H. M. Zimmerman, New Haven, Conn.—p. 66.
Microbic Etiology of Rheumatic Fever and Arthritis. E. P. Jordan, Chicago.—p. 79.
Method for Detecting Sparsely Distributed Tubercle Bacilli. J. Felsen, New York.—p. 110.

Addison's Disease Associated with Congenital Absence of Suprarenal Glands.—The case of a woman who died at the age of 35 years is reported by Crosby. At necropsy no gross evidence of suprarenal tissue could be discovered. Microscopically, small islands of suprarenal cortex were found near

the superior poles of the kidneys embedded in retroperitoneal fat. It is evident that in cases such as this, the embryonic development of the suprarenal gland has been faulty, but that cortical and medullary tissue has existed in sufficient amount to sustain life for many years, finally to become exhausted, a condition resulting in typical Addison's disease and death.

Rheumatic Pericarditis with Polypoid Formations.—A hydatidiform mass in the pericardium is reported by Bohrod which is apparently unique. It is considered to be a peculiar result of the healing of rheumatic hemorrhagic pericarditis.

Periarteritis Nodosa.—Kountz reports a case of periarteritis nodosa in which the usual pathologic changes described in the literature were present. The lesions were most prominent in vessels of the abdominal organs. In addition, the oldest and most extensive lesions were found in the gallbladder, where both arteries and veins were affected. The portal veins in the dome of the right lobe of the liver were extensively involved. That area in the liver represents the area of drainage from the gallbladder. It is suggested that perhaps the primary lesion was in the gallbladder and that the agent was borne by the blood to the other tissues of the body.

Association American M. Colleges Journal, Chicago

5: 193-256 (July) 1930

*Extension Work in Medical Education. C. R. Bardeen, Madison, Wis. —p. 193.
Experiment in Medical Graduate Work. G. S. Ford, Minneapolis.—p. 200.
Statistical Method as Adjunct to Teaching of Medicine in Clinic. J. Wyckoff, New York.—p. 210.
Postmortem Examinations in Graduate Medical Instruction. H. E. Robertson, Rochester, Minn.—p. 216.
Medical Education in England. W. T. Dawson, Galveston, Texas. —p. 222.
*Analysis of Entrance Credentials Presented by Freshmen Admitted in 1929. F. C. Zapffe, Chicago.—p. 231.

Extension Work in Medical Education.—Bardeen says that the extramural educational influences of a university medical school are extended to the profession of the community which it serves in many ways besides more or less definitely organized extension services. In state universities at which are located in connection with the medical school such laboratories as those of the state board of health and the state board of charities, much valuable educational work may be extended through laboratory services offered in these laboratories to physicians. In the trifold duties of the modern university medical school, undergraduate teaching, scientific research and extramural education, the greatest difficulty lies in so organizing the work as to keep the three fields well balanced. When well balanced each field aids the other. Lack of balance by overenthusiasm for one field at the expense of the others is likely in the long run to prove detrimental to the favored field.

Analysis of Entrance Credentials Presented by Freshmen Admitted in 1929.—The 76 schools included in Zapffe's study matriculated 6,369 freshman students in the fall of 1929, the largest freshman class in the history of medical education in the United States. Two schools demand a degree for admission. Thirteen schools demand 90 college hours for admission; 3 schools demand 72 hours; the remainder demand credits which can be met by two years of attendance in premedical courses. Only 1,462 applicants (23.1 per cent) presented the minimum of 60 college hours for admission; 1,752 (27.5 per cent) had 90 hours credit and 2,889 (45.2 per cent) came with a degree; 265 (3.7 per cent) had more than 120 credit hours but without a degree.

Canadian Public Health Journal, Toronto

21: 315-368 (July) 1930

Three Problems. W. L. Hutton, Brantford.—p. 315.
Report of Outbreak of Psittacosis in Canada. A. R. Chisholm, Victoria, British Columbia.—p. 320.
Municipal Doctor Scheme in Saskatchewan, F. C. Middleton, Saskatchewan.—p. 325.
Outbreak of Typhoid Fever at Gillam. F. W. Jackson, Manitoba.—p. 328.
Crippled Children: How May Deformities Be Prevented? R. I. Harris, Toronto.—p. 332.
Modern Hospital for Treatment of Contagious and Infectious Diseases. B. E. Parry.—p. 338.
Antituberculosis Programs in England and Continent. F. G. Ferguson, Saskatchewan.—p. 345.
Public Health Nurse: Work in Relation to Maternal Mortality. M. S. Taylor, Regina.—p. 349.

Georgia Medical Association Journal, Atlanta

19: 268-314 (July) 1930

Home Treatment of Pulmonary Tuberculosis. J. A. Redfearn, Albany. —p. 271.
Diphtheria Prevention in Georgia. H. B. Jenkins, Thomasville.—p. 274.
Medical Profession and Changing Social Order. C. W. Roberts, Atlanta. —p. 278.
Prenatal Care. J. F. Crane, Rome.—p. 283.
Scleroderma: Insulin Therapy: Case. E. F. Wahl, Thomasville.—p. 285.
Pernicious Anemia. W. W. Anderson, Atlanta.—p. 288.
Undulant Fever: Case. M. L. B. Clarke, Atlanta.—p. 300.

Illinois Medical Journal, Oak Park

57: 1-76 (July) 1930

Real Problems of Modern Medicine. M. E. Rehfuss, Philadelphia. —p. 39.
Why Medical Profession Is Opposed to Sheppard-Towner Law. C. E. Humiston, Chicago.—p. 46.
Esthetic Surgery of Pendulous Breast, Abdomen and Arms in Female. M. Thorek, Chicago.—p. 48.
Relationship Between State Department of Public Health and Other Organizations. A. Hall, Springfield.—p. 57.
*Dermatubin Test: Comparison with von Pirquet, Moro and Mantoux Tuberculin Reactions. B. Goldberg and B. Gasul, Chicago.—p. 60.
Bronchosinusitis Disease and Incipient Pulmonary Tuberculosis. W. W. Wasson, Denver.—p. 62.
Exstrophy of Bladder. T. S. Robertson, Chicago.—p. 66.
Public Health Problems. E. A. Edlen, Moline.—p. 70.
Whooping Cough: Plea for Earlier Diagnosis. L. W. Sauer, Evanston. p. 71.
Technic of Intratracheal Injection of Iodized Oil. J. R. Head, Chicago.—p. 73.

Comparison of Dermatubin Test with Pirquet, Moro and Mantoux Tuberculin Reactions.—Of 109 children examined by Goldberg and Gasul, 37 per cent were positive to the Pirquet, 20 per cent were positive to the Moro, 39 per cent were positive to the Mantoux, and 39 per cent were positive to dermatubin. The dermatubin test is easy of application and offers no difficulty in interpretation. Owing to this fact, it is superior to the Pirquet, in which interpretation is more difficult. Owing to the fact that dermatubin is applied without pain or discomfort, it is of more practical use than the Mantoux test, which requires technical skill in its application, is accompanied with some pain and is not devoid of the possibilities of complications.

Indiana State Medical Assn. Journal, Fort Wayne

23: 305-348 (July) 1930

Gallbladder Disease. V. E. Simpson, Louisville, Ky.—p. 305.
Chronic Prostatitis. P. E. McCown, Indianapolis.—p. 313.
Primary Carcinoma of Maxillary Antrum. C. E. Stone, Bedford.—p. 315.
Fracture of Neck of Femur. E. B. Mumford, Indianapolis.—p. 316.
Orchitis and Epididymitis: Treatment with Ortho-Iodoxybenzoic Acid. W. C. Service, Colorado Springs, Colo.—p. 318.
Schick Reaction. J. D. Ralston, Indianapolis.—p. 320.

Journal of Nutrition, Springfield, Ill.

3: 1-98 (July) 1930

*Nutritive Value of Cereal Breakfast Foods: IV. Response of Human Stomach. H. D. Clough, J. S. Carman and E. M. Austin, Rochester, N. Y.—p. 1.
*Id.: V. Biologic Value of Cereal Proteins as Determined on Rats. H. A. Mattill, Rochester, N. Y.—p. 17.
Comparative Value of Different Food Proteins for Reproduction and Lactation in Rat: II. Milk, Egg and Meats. M. M. Clayton, Rochester, N. Y.—p. 23.
Deficiencies of Synthetic Diets in Chick Nutrition. A. G. Hogan and C. L. Shrewsbury, Columbia, Mo.—p. 39.
*Nutritional Potency of Fresh, Cooked, Dry and Alcohol-Extracted Liver. J. S. McHargue, W. R. Roy and F. E. Hull, Lexington, Ky.—p. 49.
Effects of High Sugar Diets on Growth and Structure of Rat. C. M. Jackson, Minneapolis.—p. 61.
Influence of High and Low Protein Diet on Basal Metabolism and Chemistry of Blood and Urine in Normal Women. C. C. Wang, J. E. Hawks, B. Huddlestun, A. A. Wood and E. A. Smith, Chicago. —p. 79.

Nutritive Value of Cereal Breakfast Foods.—Two studies of the gastric response to different cereal breakfast foods in common use in the United States were made by Clough et al. In the first, three subjects were used and three cereals. In the second and more complete study, four subjects and four cereals. Each person ate the same cereal on four or five successive days and submitted to evacuation of the stomach contents at successively longer intervals after eating each day. The rate of emptying of the stomach was determined by the amount of nitrogen remaining in the stomach at each interval and express-

ing this amount as a percentage of the total nitrogen in the meal as ingested. This procedure was repeated on successive weeks until each subject had eaten all four of the cereals. The test meals were cooked in a uniform manner for each subject and eaten with the same amounts of cream and sugar by each subject. Curves exhibit characteristic rates for each subject whatever cereal was chosen. There were but slight differences in the rates of evacuation of the different cereals in the same subject. As an average of seven trials with wheat endosperm and whole oats the former showed 83 per cent and the latter 76 per cent evacuation at the end of two hours. Roughage in the form of bran in normal proportion or less appeared to influence evacuation time of the stomach little either way.

Biologic Value of Cereal Proteins as Determined on Rats.—The biologic value of the proteins of three cereal breakfast foods and of milk was determined by Mattill on rats by Mitchell's method. The proteins were fed on an approximately 5 per cent level. The average biologic values obtained from 6 to 8 periods on each food were 89 for milk, 82 for oats and 73 and 72, respectively, for two wheat preparations.

Potency of Fresh, Cooked, Dry and Alcohol-Extracted Liver.—McHargue et al. assert that rats fed on a synthetic diet for seventeen days declined rapidly during this time and failed to make any appreciable gains in weight when fed, as supplements, moisture-free liver that had been dried at 100 C. in air, whereas rats receiving equivalent amounts of raw liver, in connection with the synthetic ration, made rapid gains. Other rats receiving raw potatoes and tomatoes as supplements to the synthetic diet and dry liver made appreciable gains, whereas rats fed equivalent amounts of cooked potatoes and tomatoes made little or no gains in weight.

Journal of Urology, Baltimore

24: 1-117 (July) 1930

Kidney and Ureteral Lesions Secondary to Adnexal Disease. A. von Lichtenberg, Berlin, Germany.—p. 1.
Posterior Spinal Fusion Defects and Nerve Dysfunction of Urinary Tract. H. O. Mertz and L. A. Smith, Indianapolis.—p. 41.
Congenital Valvular Obstruction of Prostatic Urethra with Vesical Diverticulum. F. W. Schacht, Rochester, Minn.—p. 83.
Torsion of Spermatic Cord: Case. H. L. Kretschmer, Chicago.—p. 91.
Syndrome of Diverticulum of Spermatic System in Neighborhood of Prostate, Obstructing Neck of Urinary Bladder. C. B. Huggins, Chicago.—p. 100.
Severe Hemorrhage Following Ureteral Meatotomy. W. J. Vynalek, Chicago.—p. 111.

Military Surgeon, Washington, D. C.

67: 143-274 (August) 1930

Significance of Mycology in Tropical Medicine. B. K. Ashford.—p. 143.
Demographical Expansion of Italy. G. L. Rolando.—p. 151.
Blackwater Fever. H. P. Makel and W. Gilder.—p. 156.
Radiant Energy: III. Cancer. F. M. Hartsock.—p. 165.
Parotitis Secondary to Operation on Ovary: Case. J. M. Tamraz.—p. 168.
Administrative Controls of Epidemic Meningitis. J. W. Smith, Jr.—p. 170.
Staining Rack for Laboratory: New, Simple Mounting for Centrifuges. J. W. Smith, Jr.—p. 173.
Electrocardiography. H. C. Michie.—p. 177.
Use of Tear Gas in Maneuvers. A. Gibson.—p. 195.
Days Gone By: General Medical Board in World War. J. R. Kean.—p. 203.

Minnesota Medicine, St. Paul

13: 445-516 (July) 1930

Lord Lister. E. P. Quain, Bismarck, N. D.—p. 445.
Minor Surgery. Frederick Christopher, Evanston, Ill.—p. 451.
*Tuberculosis of Intestine: Differential Diagnosis. J. A. Bargen, Rochester.—p. 457.
Tuberculids. W. H. Goeckerman, Rochester.—p. 462.
*Acute Perforated Peptic Ulcer. E. C. Robitshek, Minneapolis.—p. 465.
*Tetany and Edema in New-Born: Case. W. R. Shannon, St. Paul.—p. 476.
Carbuncle of Kidney. G. J. Thomas and E. W. Exley, Minneapolis.—p. 484.
Distant Metastasis in Carcinoma of Cervix of Uterus. F. A. Ford, Rochester.—p. 489.
Pulmonary Asbestosis: Case. R. G. Mills, Fond du Lac, Wis.—p. 495.

Tuberculosis of Intestine.—Bargen says that the lesions of greatest significance in making a differential diagnosis in cases of tuberculosis of the large intestine divide themselves according to the type of tuberculosis with which one is dealing. The hyperplastic type must be distinguished from malignant disease, actinomycosis, pyogenic pericecal or ligneous reaction, causing cecal deformity, localized diverticulosis, and other benign cecal and pericecal lesions. The ulcerative type must be distinguished from malignant disease, diverticulitis, polyposis, amebic ulceration and chronic ulcerative colitis. Amebic ulceration and the regional or migratory type of chronic ulcerative colitis present the greatest differential difficulties. Gross examination of the stools with the naked eye gives valuable information about the various ulcerative forms of disease of the colon. The proctoscope and the roentgenogram are the most valuable diagnostic aids.

Acute Perforated Peptic Ulcer.—A review of fifty-three operative cases is presented by Robitshek; fifty-one (or 96.4 per cent) occurred in males. The youngest in this series was 19 and the oldest 66 years of age, the average being 37 years. Seventy-five per cent gave a history of gastric disturbances prior to the onset of the perforation. The acute symptoms were sudden in 96 per cent of these cases and occurred with no relation either as to time, method or place. The pain was referred to the epigastric region in 36 per cent, more or less vaguely without direct reference to any specific locality, to the abdomen in 58 per cent, and to the umbilical region in 7 per cent. Radiation of pain was not a consistent or constant sign. In two cases pain was referred to the right shoulder; in another two, to the left; in two others, to the lower right abdominal quadrant; in one, to the back; and in one, simply to the right side of the abdomen. Nor did the records show vomiting or nausea to be constant or characteristic signs or symptoms of these perforations. They were, however, recorded in about 40 per cent of the cases. Collapse or prostration was recorded four times. Surgical shock was not recorded. The large majority of the perforations occurred on the anterior surfaces of the duodenum and stomach, and within an inch or an inch and a half of the pyloric ring. They were, for the most part, of the characteristic type, being round, single, resembling a punched-out hole or opening of small size, and found usually at the bottom of the ulcer, the base of which was indurated. Adhesions, if present, were thin and of recent origin. Twenty-seven, or about 50 per cent, were recorded as duodenal, and twenty-one, or 40 per cent, as gastric. Four were classed as gastroduodenal, being found at the junction, and one, classed as jejunal, was found one inch distal to a previous gastro-enterostomy. In two cases the perforation was found on the posterior wall of the stomach; in another, near the cardia; and in still another, about 3 inches from the pylorus over the fundus of the stomach. In twenty-three cases, or 43 per cent, a simple closure of the perforation, with or without reinforcement of an omental tag or its equivalent, was performed; thirteen in 24.5 per cent, a simple closure plus a gastro-enterostomy was performed; in three cases cauterization with an actual cautery, followed by a closure of the perforation, was done; in two cauterization, followed by gastro-enterostomy, was recorded; in four an excision of the ulcer with simple closure was performed; in two excision of the ulcer, followed by gastro-enterostomy, was performed; in one a gastric resection was made; four had some form of pyloroplasty, with ulcer excision; and in one the cautery and pyloroplasty were both used. Out of thirty-one cases in which drainage was used, twenty-four improved and seven patients died; in eight cases in which no drains were used, seven improved and one patient died; and in fourteen cases in which no record was made as to whether or not drainage was used, nine improved and five patients died. Death occurred in thirteen cases of this series, representing a mortality rate of 24.5 per cent. Of these thirteen patients, five died who were operated on within the seven-hour period, while seven others who died were operated on within a period of time ranging from twenty hours to ten days following the onset of the perforation. In one case the time period was not stated.

Tetany and Edema in New-Born.—The case reported by Shannon was that of a new-born infant who during a period of illness lasting slightly more than a month presented a group of symptoms which have previously been assumed by at least two writers as indicating a condition of tetany due to deficiency in the calcium metabolism. The underlying illness was a low

grade peritonitis which eventually caused death. The symptoms that occurred throughout this illness consisted of certain nervous signs and a generalized edema. These symptoms were amenable to parathyroid and calcium treatment at first temporarily and finally permanently when viosterol was added.

Nebraska State Medical Journal, Norfolk

15: 257-296 (July) 1930

Minor Surgery. F. Christopher, Evanston, Ill.—p. 257.
Diseased Gallbladder. B. B. Davis, Omaha.—p. 262.
Feet: Good, Bad and Indifferent. J. E. M. Thomson, Lincoln.—p. 267.
Progress of Surgery. H. H. Davis, Omaha.—p. 271.
Dermatologic Clinics. A. Schalek, Omaha.—p. 274.
Melanotic Sarcoma: Case. L. Stark, Norfolk.—p. 276.

Pennsylvania Medical Journal, Harrisburg

33: 655-720 (July) 1930

Pathology of Prostatic Obstructions. A. Randall, Philadelphia.—p. 655.
Prostatic Obstruction from General Surgeon's Point of View. F. R. Bailey, Pittsburgh.—p. 657.
Preparation and Determination of Qualifications of Patient for Operation. E. J. McCague, Pittsburgh.—p. 661.
Prostatectomy. T. Baker, Pittsburgh.—p. 663.
Prostatism: Palliative or Operative Treatment. W. E. Lee and F. S. Schofield, Philadelphia.—p. 666.
Problems in Treatment of Prostatic Obstruction. W. E. Lower, Cleveland.—p. 670.
Prospects of Prostatic. E. L. Keyes, New York.—p. 672.
Common Cold in Infancy and Childhood. G. Smith, York.—p. 680.
Heart Block: Improvement Under Barium Chloride. L. D. Johnson, Connellsville.—p. 683.
Psychoneurosis Resembling Chorea. B. Halporn, Uniontown.—p. 683.
Hypernephroma with Arterial Metastasis. P. G. McKelvey, Greensburg.—p. 684.
Summary of Unusual Number of Cancers in One Family. T. T. Sheppard, Pittsburgh.—p. 685.
Electrocardiogram of Dextrocardia. A. S. Kech, Altoona.—p. 685.
Staphylococcus Aureus Blood Stream Infection in Child with Recovery. W. A. Bradshaw, Pittsburgh.—p. 686.

Radiology, St. Paul

15: 1-172 (July) 1930

Place of Roentgen-Ray Crystallography in Development of Modern Science. J. D. Bernal, Cambridge, England.—p. 1.
*Relation of Dietary to Effects of Large Amounts of Roentgen Rays on Organism. L. H. Jorstad and E. C. Ernst, St. Louis.—p. 13.
Skin Erythema with Combinations of Two Types of Radiation. E. H. Quimby and G. T. Pack, New York.—p. 30.
Simple Self-Rectifying Gas Roentgen Tube. R. W. G. Wyckoff and J. B. Lagsdin, New York.—p. 42.
Analysis of Diaphragm System for Roentgen Standard Ionization Chamber. L. S. Taylor, Washington, D. C.—p. 49.
Roentgen Diffraction in Liquids. C. W. Stillwell and G. L. Clark, Urbana, Ill.—p. 66.
*Roentgen Findings in Erythroblastic Anemia. F. B. Mandeville, New Haven, Conn.—p. 72.
Visualization of Pelvic Viscera. I. F. Stein and R. A. Arens, Chicago.—p. 85.
Measurement of Intensity of Gamma Rays of Radium in r-Units. Otto Glasser and F. R. Mautz, Cleveland.—p. 93.
Diagnostic Exposures in r-Units. J. M. Barnes and S. L. Meltzer, Ann Arbor, Mich.—p. 101.
Quartz Mercury Arc. W. T. Anderson, Jr., Newark, N. J.—p. 109.
Decrease in Efficiency of Grenz-Ray Tubes. A. H. Warner, Los Angeles.—p. 115.
Long Spacings of Rubber and Cellulose. G. L. Clark and K. E. Corrigan, Urbana, Ill.—p. 117.
Experimental Studies of Motility of Gastro-Intestinal Tract of Rachitic Rats by Means of Roentgen Ray. L. J. Menville, S. N. Blackberg and J. N. Ané, New Orleans.—p. 123.
Formulae for Rapid Calculation of Millicuries of Radon (Emanation) Destroyed and Dosage Delivered. H. I. Teperson, New York.—p. 129.
Stereoroentgenography of Mastoids. W. O. Weiskotten, San Diego, Calif.—p. 130.
Measurement of Current During Short Exposures. M. M. Schwarzschild, New York.—p. 132.
Portable Radiographic Autopsy Examination. P. F. Titterington, St. Louis.—p. 135.
Roentgen Therapy of Giant-Cell Tumor and Osteitis Fibrosa Cystica. L. T. Le Wald, New York.—p. 136.

Relation of Dietary to Effects of Large Amounts of Roentgen Rays on Organism.—Jorstad and Ernst found that the white rat withstands relatively large amounts of roentgen radiation given at biweekly intervals over a period of time if cod liver oil is added to a well balanced stock ration. Even though a well balanced ration rich in vitamin A is protective, the rats do not gain weight as rapidly during the period of roentgen exposures as they do previous to and following this period.

Roentgen Observations in Erythroblastic Anemia.—Mandeville states that roentgen examinations in erythroblastic anemia demonstrate peculiar changes in the bones of definite value in confirming the clinical diagnosis. The roentgen observations in bones in four additional cases of erythroblastic anemia are presented. Necropsies of six cases have been made in various medical centers. The necropsy reports tend to confirm the roentgen observations.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Glasgow Medical Journal

114: 1-48 (July) 1930

Primary Sarcoma of Spleen: Case. J. H. Wright and E. M. K. Stevenson.—p. 1.
*Mineral Metabolism in Infancy. S. V. Telfer.—p. 10.
*Investigation into Pyuria in Infancy and Childhood. M. A. Griffin.—p. 21.

Mineral Metabolism in Infancy.—Metabolic experiments have been carried out by Telfer on breast-fed infants to determine the retention values of the mineral elements during the first year. The data show that the mineral composition of human milk is closely adjusted to the growth needs of the infant. All the elements are retained in the same proportion as they are provided, and their concentration in the milk affords an intake which in quantity as well as in proportion conforms to the infant's mineral requirements. The mineral requirements at different stages of growth are accurately expressed by the quantities of calcium, magnesium, phosphorus and iron in the infant's milk requirements. Over the whole period of breast feeding, the average retention of each element is approximately 60 per cent of the intake. The mineral intake required at any stage of growth and furnished by the milk is therefore considerably greater than the quantities retained by the growing tissues and represented by the retention values. Part of the intake of each element is expended in the process of utilization. The retention values of the mineral elements are discussed in relation to growth. The risks of an inadequate intake from abnormally low concentration of the mineral elements in breast milk and prolonged breast feeding are indicated.

Pyuria in Infancy and Childhood.—Griffin's investigation disclosed that pyuria in cases coming to postmortem is generally due to a pyelonephritis rather than to a single pyelitis. The evidence points to a blood-borne infection in the majority of cases, as the pelvis and bladder were generally much less severely affected than the kidney substance and in many cases showed no histologic change. The cellular reaction in the kidneys was mostly cortical, and organisms were found in the glomeruli and blood vessels. The infection may be rapidly fatal but is not always so, even in severe cases. There is evidence of healing in a considerable number, as shown by areas of fibrosis, or the infection may persist for some time in the form of patches of round cell infiltration. It is possible that in cases in which infection is overcome the only permanent damage may be foci of fibrosis, as was seen in one case in which pyuria continued for three months and cleared up one week before death, which was due to acute bronchopneumonia. Such cases seem to be liable to recrudescence of infection from time to time, and these exacerbations may prove fatal. During the acute stage of the illness agglutinins to the causal organism may be present in the child's blood, but these rapidly disappear when the infection subsides. The presence of agglutinins is evidence of absorption of organisms or their products into the blood, and this occurs chiefly in the presence of definite renal damage.

J. Obst. & Gynaec. British Empire, Manchester

37: 213-420 (Summer) 1930

*Nature and Sources of Infection in Puerperal Sepsis. J. Taylor and H. D. Wright.—p. 213.
*Congenital Retention of Menses. R. C. Brown and A. Brews.—p. 233.
*Relation of Fatness to Sterility. H. G. Hill and J. F. Smith.—p. 256.
Gynecology and Obstetrics in Shakespeare. V. B. Green-Armytage.—p. 272.

*Value of Sedimentation Test in Obstetrics and Gynecology. G. H. Dodds and F. L. Telfer.—p. 286.
Tuberculosis of Female Generative Organs: Four Cases. M. Salmond. —p. 296.
*Postmenopausal Hemorrhage. S. B. Herd.—p. 304.
Acute and Chronic Inversion of Uterus. W. B. Bell.—p. 310.

Nature and Sources of Infection in Puerperal Sepsis.—True hemolytic streptococci have been isolated by Taylor and Wright from the vagina of 32 out of 1,123 women immediately before delivery (2.7 per cent). Of these, 18 possessed the properties of the variety *Streptococcus pyogenes*. Pseudohemolytic streptococci have been found in 1.3 per cent of these cases and anaerobic cocci in 1 per cent. There is no evidence that any of these organisms gave rise to infection in the puerperium. Hemolytic streptococci and anaerobic cocci have been isolated from the lochia and from the uterine contents of apyrexial cases. Of 125 febrile cases examined, 50 were certainly and 27 others probably due to some extra-uterine cause; 48 were definitely septic. Of these 48 cases, 14 were caused by hemolytic streptococci, 10 by anaerobic cocci and eight by *B. coli*. Of 21 septic cases only 4 harbored the causative organism in the vagina before delivery (two *B. coli*, two nonhemolytic streptococci). The bacteria present in the vagina before delivery are apparently a less serious danger than those which enter during or after labor.

Congenital Retention of Menses.—Fifty cases are reported by Brown and Brews. Congenital retention of the menses is most commonly due to an occluding membrane at the vaginal orifice. There is clinical and histologic evidence that this membrane may be of two varieties: (*a*) an obstructing membrane above a normal hymen; (*b*) an imperforate hymen. Patients seeking treatment after the end of the sixteenth year often exhibit some abnormality other than a simple occluding membrane. Cases in which the obstruction is situated at a level higher than the vaginal outlet are commonly associated with other congenital abnormalities of the genito-urinary tract. The symptoms are characteristic and the cases can be grouped into definite clinical types. The signs are diagnostic except in those rare cases in which the genital tract is partially or completely double. The majority of errors in diagnosis would be avoided by a more complete physical examination. The immediate risk of simple cases of hematocolpos is negligible, but there is a serious risk if the retention of menses is complicated by dilatation of the upper genital tract or by the presence of genital defects other than the occluding membrane. The fluid should be allowed to escape unassisted by abdominal pressure. No attempt should be made to irrigate the vagina or to introduce gauze drainage. The prognosis with regard to subsequent fertility is excellent. Remote complications of any sort are exceedingly rare when adequate drainage has been established.

Relation of Fatness to Sterility.—Hill and Smith have analyzed 198 cases of obesity in married women and conclude that obesity per se is not a cause of sterility. When the two conditions occur together, sterility is usually the result of amenorrhea or occasionally of hypothyroidism. A feature of the hypothyroid cases is the maintenance of regular menstruation. The prognosis of sterility associated with obesity depends on the cause. Those cases with amenorrhea are the most intractable, and those with hypothyroidism the most amenable to treatment.

Value of Sedimentation Test in Obstetrics and Gynecology.—An investigation was made by Dodds and Telfer to determine whether any information, either of diagnostic or of prognostic value, could be obtained by the routine use of the test in antenatal, puerperal and gynecologic cases. The test was performed 1,030 times, 27 normal nonpregnant women, 452 antenatal, 423 puerperal and 128 gynecologic cases being investigated. They found that the sedimentation reaction is raised in normal pregnancy after the fourth month. The sedimentation reaction is raised during the normal puerperium; only 6.2 per cent of the cases examined showed a normal sedimentation reaction within the first ten days. The sedimentation reaction is raised in cases of acute pelvic inflammation, but the degree of inflammation and the height of the sedimentation reaction are not parallel in all cases. The test is of no value in the differential diagnosis between pelvic abscess and ectopic pregnancy or in the diagnosis of malignant conditions.

Postmenopausal Hemorrhage.—In 61 out of 100 patients seen by Herd the lesion proved to be malignant. The majority of cases present no difficulty in diagnosis but in about 20 per cent the only satisfactory method of excluding malignant disease appears to be the careful use of sound and curet.

Lancet, London

2: 63-118 (July 12) 1930

Reserve Forces of Kidney. E. B. Verney.—p. 63.
*Acute Meningo-Encephalitis Associated with Herpes Zoster: Fatal Case. C. I. Schiff and W. R. Brain.—p. 70.
Surgical Treatment of Adhesions Interfering with Artificial Pneumothorax. G. Maurer.—p. 72.
Thoracoscopy and Internal Pneumolysis. F. G. Chandler.—p. 74.
Radium in Carcinoma of Breast: Case. W. H. C. Romanis.—p. 76.
*Prevention of Thrombosis. C. A. J. Quant.—p. 76.
Mastoid Dyspepsia in Child. L. W. Batten.—p. 77.
Congenital Syphilis with Syphilitic Meningitis: Case. R. Ström-Olsen. —p. 78.

Acute Meningo-Encephalitis Associated with Herpes Zoster.—Schiff and Brain report one case. Not only did the patient die of acute meningo-encephalitis associated with herpes zoster but he exhibited aberrant zoster vesicles and apparently transmitted varicella to his son.

Prevention of Thrombosis.—Quant suggests that after operation patients should be moved as soon as possible and allowed to get up for short periods several times a day because slowing of the blood stream is probably the determining cause of thrombosis. Statistics show that this nearly always occurs on the left side of the pelvis, which is, perhaps, the weakest link in a chain. Anatomic considerations show that strictures and whirlpool formation are likely to occur in the the iliac vein in this region, and the possibility is greatly increased by long confinement to bed, lying with outstretched legs, tightly tucked-in blankets, and a tight bandage round the abdomen and hips.

2: 119-174 (July 19) 1930

Neurohypophysial Mechanisms from Clinical Standpoint. H. Cushing. —p. 119.
*Value of Ramisection in Cases of Spastic Weakness. C. P. Symonds, A. S. B. Bankart, W. R. Bristow, R. C. Slmslie, E. L. Evans, H. A. T. Fairbank, G. Perkins, W. G. Pugh, W. H. Trethowan, P. J. Verrall.—p. 127.
Intravenous Pyelography. F. Kidd.—p. 128.
Intravenous Pyelography as Test of Renal Function. K. Heritage.—p. 132.
*Tellurium in Treatment of Syphilis. A. D. Frazer.—p. 133.
Adenitis of Iliac Glands. R. J. M. Love.—p. 135.
Congenital Atresia of Esophagus. C. J. Polson.—p. 135.
Cultivation of Tuberculous Granuloma in Vitro. T. Lumsden.—p. 136.

Value of Ramisection in Spastic Weakness.—Symonds et al. record the observations made by several independent witnesses on six patients operated on by Royle in 1927. The patients were selected by Royle as presenting marked cases of spasticity likely to benefit from ramisection. The following conclusions are arrived at: The operation of cervical or lumbar ramisection as performed by Mr. Royle is without effect on the rigidity from extrapyramidal disease. The rigidity of pyramidal disease as seen in conditions of hemiplegia or quadriplegia in children may be temporarily diminished after the operation. This temporary diminution of tone has been observed in both upper and lower limbs with some improvement of voluntary power. The diminution of tone and improvement of function are, however, short lived, and within a few weeks or months, notwithstanding continuous measures of reeducation under experienced medical supervision, the condition of the patient remains as before the operation. In the opinion of several of the surgeons who examined these patients both before and shortly after operation, the diminution of tone was no more than may be seen after any major surgical procedure with postoperative shock. The operation therefore appears to have no place of value in the treatment of spastic weakness. The observations recorded show that in young human beings the sympathetic fibers play no part of any importance in the maintenance of muscular rigidity, whether this is of the so-called parkinsonian variety or of the type seen in lesions of the pyramidal tracts.

Tellurium in Treatment of Syphilis.—Frazer states that tellurium is a powerful antisyphilitic drug which would undoubtedly be mode widely used but for the inevitable smell of garlic following its administration, and the fact that bismuth seems

to act almost identically without producing this odor. There remains, however, one class of case in which tellurium might be useful—namely, the Wassermann-fast case, in which, in spite of the exhibition of arsenic and bismuth or mercury, the patient does not react serologically and lives with the possibility of recurrence of clinical manifestations of the disease hanging over his head. Seven Wassermann-fast cases were treated by Frazer with tellurium, and four were favorably influenced. A course consisted of about 5 cc. of tellurium suspension given intramuscularly in 0.5 to 1 cc. doses at intervals of from five to seven days. A month's rest was then allowed before the Wassermann reaction was tested.

Medical Journal of Australia, Sydney

1: 831-850 (June 28) 1930

Tetanus: Diagnosis and Treatment. A. E. Paterson.—p. 832.
*Action of Electrolytes on Heart. J. Fiddes, H. L. Stokes and S. E. Allason.—p. 835.

Action of Electrolytes on Heart.—It is suggested by Fiddes et al. that certain arrhythmias and heart block may be due, at least in part, to general or localized changes in ionic concentration. Heart block was produced quickly by slight acidity before the rate and amplitude of the Q-R-S-T intervals were much altered, but potassium, on the other hand, produced distinct slowing of the Q-R-S-T intervals before heart block became prominent. The effect of reducing sodium to one half on the heart of the rabbit and guinea-pig was to increase the rate of contraction and relaxation, in contrast to what happens in the frog heart.

Gynécologie et Obstétrique, Paris

21: 385-464 (May) 1930

*Diagnosis of Tuberculous Salpingitis: Besredka Reaction. E. Douay and P. Iépuréano.—p. 385.
Sarcoma of Uterus: Two Cases. G. Muller and C. Oberling.—p. 411.
*Choice of Method for Cesarean Section. L. Goussakoff.—p. 419.
Pelvitomy in Primiparas. E. Aburel.—p. 430.
*Subcutaneous Injection of Urine of Pregnant Women in Treatment of Certain Menstrual Disorders. A. A. Zamkoff.—p. 439.

Diagnosis of Tuberculous Salpingitis: Besredka Reaction.—Douay and Iépuréano feel that in the majority of cases adnexal tuberculosis falls in the realm of surgery; hence, they advocate an early operation. When diagnosis is in doubt, the patient should be kept under observation for several weeks. Since the only danger in the operation is the opening of the bladder or the intestine, an early operation, before the tuberculosis has reached other organs, is all the more urgent. Adnexal tuberculosis is much more prevalent than is commonly believed. From 93 to 95 per cent of the cases of genital tuberculosis among women are of this type. Many difficulties complicate the clinical diagnosis. There is no certain and dependable means of clinical diagnosis. Of the various methods employed by the laboratory to detect tuberculosis, the complement fixation reaction would seem to be most satisfactory. The authors used the Besredka antigen test in twenty-nine cases. Of twenty-three patients suspected of having tuberculosis and operated on, fourteen clearly showed tuberculous lesions on microscopic examination of removed specimens. In the fourteen cases, a positive reaction was obtained ten times. As positive results may be obtained from certain nontuberculous patients (syphilis, malaria and convalescent diphtheria cases) the authors also make a blood test for syphilis. The authors conclude that the Besredka antigen fixation reaction deserves an important place in the diagnosis of genital tuberculosis in women.

Choice of Method for Cesarean Section.—Of the three principal types of abdominal cesarean section—the classic cesarean, the intraperitoneal cesarean (sometimes inaccurately called cervical cesarean), and the extraperitoneal cesarean—Goussakoff prefers the second method. This form, to which he also applies the name isthmocervical section, or low cesarean, is less apt to result in a rupture in subsequent normal births or even in pregnancy and is less apt to be followed by sterility; moreover, the possibilities of infection are greatly reduced by this method.

Urine of Pregnant Women in Treatment of Menstrual Disorders.—The idea of using the urine of a pregnant patient for medical treatment suggested itself to Zamkoff in the course of his research on the determination of pregnancy. The efficacy of the urine depends on the presence of the hormone of the anterior lobe of the hypophysis. The author employed such urine in cases of menstrual disorders. In cases of amenorrhea, the injections often reestablished the menses and greatly improved the general health of the patient. He treated twenty patients in whom the hypofunctioning of the ovaries dated from an early age and was apparently connected with some radical surgical treatment prior to that date. After from five to eight subcutaneous injections of specially prepared urine (mode of preparation not given), all the patients of this group were greatly improved; their health was restored, the menses usually reappeared slightly, and the menopause was attended by no further suffering. In each case the high blood pressure was reduced to a point near normal. The author also determined that the injections had no deleterious effect on the organism, neither ovulation nor spermatogenesis being affected. In fact, three patients became pregnant after a sterility of three, four and nine years, respectively. In cases of hypofunction and amenorrhea, a dose of from 30 to 60 mouse units was found satisfactory. No general rule can be given for the duration and efficacy of the treatment, as they will vary with the individual.

Paris Médical

1: 539-554 (June 14) 1930

*Myeloid Leukemia with Priapism an Early Symptom. C. Achard.—p. 539.
Pruritus and Flocculation. A. Lumière.—p. 542.
*Traumatic Aseptic Meningitis: Case. A. Baudouin and J. Lereboullet.—p. 545.
Monocytosis and Shock. P. L. Drouet and P. Florentin.—p. 548.
Experimental Pulmonary Surgery and Its Human Orientation. G. Rosenthal.—p. 551.

Myeloid Leukemia with Priapism an Early Symptom.—Myeloid leukemia is most often not diagnosed until the changes in the blood are pronounced. In reality, this phase is preceded by a preclinical one that is usually ignored by the physician and the patient. Achard reports a case in which the initial symptom was priapism. He examined the blood of a patient suffering from priapism, found indications of leukemia, and prescribed roentgen treatment. The perineum, sacrum, spleen and the epiphyses of the elbow and knee were irradiated in the course of twenty-two treatments. The treatments were successful so far as the leukemia was concerned, but the patient remained impotent. Leukemic priapism is observed principally in myeloid leukemia, although it has been noted in the lymphoid variety. It occurs almost always in adults. It usually appears suddenly, sometimes being preceded by temporary attacks of erection. It may also be a symptom of leukemia, as in the case just observed; it may appear either early or not until after the illness is well developed; or it may even occur late and persist until after death. It is even possible that certain cases of priapism, called idiopathic, are in reality due to leukemia. Leukemic priapism, when not treated, may disappear spontaneously, but the cure is slow and incomplete. The disease may last for some time and the patient is always impotent afterward. The pathogenesis of leukemic priapism has been widely discussed. The theory of its nervous origin has been rejected, likewise the hypothesis of a compression of the erector nerves by a hematoma. Venous thrombosis of the corpora cavernosa has also been given as the cause of leukemic priapism. Operation is not always attended with success, whereas in the case cited roentgen treatment brought satisfactory results in a short time.

Traumatic Aseptic Meningitis: Case.—Baudouin and Lereboullet describe the case of a young woman who fell and struck the back of her head on a piece of furniture. She felt no ill effects other than severe pain and dizziness at the moment. Neither otorrhagia nor loss of consciousness ensued, but four days later she was suddenly attacked with violent headaches and vomiting. Examination revealed a distinct stiffness of the nape of the neck and, to a slight extent, Kernig's sign; otherwise the patient was normal (temperature normal, pulse 68). Following lumbar puncture, which revealed 350 Nageotte's cells per cubic millimeter, headache disappeared and the meningeal signs abated. A second lumbar puncture revealed only 35 cells per cubic millimeter and the following day the patient seemed completely normal. A third lumbar puncture

made eleven days later showed only 11 cells. Albumin to the amount of 0.7 Gm. was still present, however. A roentgenogram of the skull showed no abnormality and the patient left the hospital eleven days after the third lumbar puncture, completely cured. The absence of fever and the absence of a history of an infectious disease support the contention that the traumatism, although slight, was the cause of the meningitis.

Presse Médicale, Paris

38: 777-792 (June 7) 1930

*Rôle of Peripheral End of Sectioned Nerve in Genesis of Various Painful Syndromes. R. Leriche.—p. 777.
*Treatment of Surgical Tuberculosis by Finikoff's Method. F. Zalewski. —p. 779.

Peripheral End of Sectioned Nerve in Genesis of Various Painful Syndromes.—The laws of Waller express only a part of the phenomena that take place after the sectioning of a nerve, according to the studies of Leriche. To these he would add that the neuroglioma which forms at the upper end of a cut nerve and the glioma of the peripheral end are not formations physiologically indifferent. Both of them, especially the neuroglioma, engender incessant vasomotor reflexes that create at the periphery, side by side with the motor and sensory deficit due to the sectioning, a new malady characterized by cyanosis, cold, edema, muscular sluggishness outside the paralyzed territory, trophic difficulties and pains. If a local anesthetic is applied to the neuroglioma, the circulation is modified at the periphery, the pulse changes, the blood pressure oscillations increase in amplitude, the extremity becomes warm, the paretic muscles regain their contractility, and the pains cease for two or three days; after simple liberation of the neuroma, the same effect is produced for about twelve days; after its excision, for two or three months; after sympathetic sections, for several days, weeks or months, and sometimes permanently. If after the removal of a neuroglioma there is a recurrence of clinical symptoms, it is because a new one has formed. To avoid this, Leriche tries to suture the two ends of the nerves, or to destroy the axis cylinders with a weak solution of potassium dichromate and sulphate (Müller's fluid), with alcohol, or with phenol.

Treatment of Surgical Tuberculosis by Finikoff's Method.—Finikoff aims to increase the defense mechanism of the organism by stimulating the lipasic power of the blood and the proteolytic power of the polymorphonuclear leukocytes. This he does by intramuscular injections of iodized oil and by the peroral administration of large doses of calcium salts. Encouraged by Finikoff's results, Zalewski applied the method to sixteen patients, the initial doses depending on the age, the general health and the stage of the disease. In adults, weekly doses of from 5 to 20 cc. were injected. At the same time the patients received by mouth a daily dose of from 6 to 8 Gm. of calcium chloride. There was scarcely any reaction after the injections. Sometimes at the beginning of the treatment it was observed that the fistulas suppurated more and that old lesions seemed to be aroused into activity; but this was of no importance, as the general condition of the patient continued to improve. The treatment lasted from five to six months. The sixteen cases fell into three groups: (1) osteoarticular tuberculosis, (2) tuberculosis of the epididymis, and (3) lymph node tuberculosis. The treatment gave uniformly excellent and lasting results. Many of the patients were able to leave the hospital, greatly improved, and some clinically cured.

Schweizerische medizinische Wochenschrift, Basel

60: 525-548 (June 7) 1930

Greater Flexibility of Law on Compulsory Vaccination in Germany. A. A. Friedländer.—p. 525.
Symptomatology of Essential Hypertonia of Vesical Sphincter. H. U. Gloor.—p. 528.
*Pulsus Alternans and Cardiac Insufficiency. P. Wolfer.—p. 531.
Medical Foundations for Estimation of Physical and Mental Capacities Necessary in Driver of Automobile. O. Franz.—p. 534.

Pulsus Alternans and Cardiac Insufficiency.—Wolfer first reviews the literature regarding pulsus alternans. He then describes experiments that he performed on rabbits. The experiments confirmed the clinical observations; namely, that pulsus alternans is comparatively rare, much less frequent than other forms of arrhythmia. When estimating pulsus alternans as a symptom of insufficiency, it has to be taken into consideration in which phase it occurs. It is most significant when it occurs before the compression, because then it indicates insufficiency and the prognosis is unfavorable.

60: 549-572 (June 14) 1930. Partial Index

Health Centers for Children of School Age. A. Grumbach.—p. 549.
Estimation of Physical and Mental Capacities Necessary in Chauffeurs. O. Franz.—p. 553. C'cn.
*Clinical Significance of Determination of Duration of Uterine Contractions During Labor. E. Frey.—p. 558.

Clinical Significance of Determination of Duration of Uterine Contractions During Labor.—Because it had been pointed out by some obstetricians that the quality of uterine contractions differs, and that it is just as important to determine their duration as it is to count them, Frey made observations on 200 primiparas. He counted the number of contractions and determined the duration of several contractions and from that calculated the total duration of all contractions. It was found that the total duration of all contractions during the period of dilatation varies between 60 and 120 minutes, but it is rarely over 60 minutes. For the period of expulsion the maximum is 40 minutes; however, in the majority of cases it is only from 15 to 30 minutes. The total duration of the contractions during both periods is usually from 60 to 90 minutes, and only in exceptional cases is the maximum of 120 minutes reached. The author comes to the conclusion that, in order to estimate whether a spontaneous parturition is possible or whether the labor is pathologic, it is sufficient to count the number of contractions. This is the more convincing when it is considered that the duration of a contraction cannot be determined precisely. However, it is desirable to know the length of the contractions, because physiologically their duration varies between 15 and 50 seconds.

Chirurgia degli Organi di Movimento, Bologna

14: 609-720 (May) 1930

Indications and Technic of Surgical Treatment of Certain Fractures: Results in One Hundred and Fifty-Six Interventions. A. Pollidori.—p. 609.
*Tuberculosis of Scapula. E. Ponzi.—p. 664.
Bone Nodule in Obturator Externus Muscle in Man, Aged Sixty. R. Bertelli.—p. 671.
Vertebral Osteomyelitis. R. Zanoli.—p. 673.
*Several Interesting Cases of Osteomyelitis in Adolescents. T. Biancheri.—p. 691.
*Autoplastic Blood "Graft" in Bone Cavities. E. Leo.—p. 703.

Tuberculosis of Scapula.—Ponzi brings out that the course of development of tuberculosis of the bone is slow and insidious. Pain does not begin until the focus has become superficial. The pain is intermittent, subsides with repose, manifests itself in association with movements, and is confined in a characteristic manner to a fixed point. The body of the scapula is invaded successively and, in addition to typical foci of granulations, there may be found multiple caseous sequestrums. For the purpose of differential diagnosis the author discusses other conditions, such as osteomyelitis, acquired syphilis, actinomycosis, sporotrichosis and echinococcosis, that may be confused with tuberculosis of the bone. The treatment in this case, in view of the precarious condition of the patient, will be confined to evacuative punctures of the abscess that is forming, to be followed by injections of corrective fluids.

Osteomyelitis in Adolescents.—Biancheri found the diagnosis easy in all the patients, except in two cases in which it was impossible to establish without the aid of roentgen examination whether it was a question of neuralgic osteitis, sclerotic osteitis or bone abscess. Roentgen examination, aside from clarifying the diagnosis, was useful also for the treatment, as it revealed the exact location of the diseased area and also its extent. In the treatment of osteomyelitis the author aimed to remove the toxic substances at the start and, from time to time, the necrotic portions, in order to preserve the function and the anatomic form. Therefore, ample drainage of the focus was instituted and in one case a part of the scapula was removed at a second stage, that being the seat of an extensive dissemination of small foci that maintained indefinitely the suppurative process. In one case the diseased calcaneus was removed and in another a sequestrum of the clavicle. The author has had

no experience with early subperiosteal resections recommended by some as the treatment of choice in acute osteomyelitis.

Autoplastic Blood "Graft" in Bone Cavities.—Leo says that no one can assert, or at least demonstrate, that any other tissue is better than blood and more endowed with elements able to resist an infective process, to combat it and to overcome it. In addition, the blood of the subject is a means always present and ready at hand, no need of preparation or of special technic for its application; nor does it cause the patient mutilations of any kind. As to the outcome, the author doubts that equal results could be obtained by the introduction of any other tissue.

Pediatria, Naples

38: 641-696 (June 15) 1930

Immunity of the New-Born and of the Infant. I. Nasso.—p. 641.
Neutralizing Property of Certain Bile Components on Diphtheria Toxin. G. Milio.—p. 653.
*Use of Condensed Milk in Infant Feeding. L. Moro.—p. 663.

Use of Condensed Milk in Infant Feeding.—Moro states that from his experience and observations the benefits to be derived from the use of condensed milk in the feeding of infants are evident, especially if account is taken of the many cases in which other foods caused an exacerbation of an infant's condition. In view of its composition, the scrupulous cleanliness with which it is prepared, and its rich vitamin content, it may be affirmed that condensed milk is one of the best substitutes for human milk, the use of which therefore finds numerous indications in infant dietetics, both normal and pathologic.

Policlinico, Rome

38: 253-308 (June 1) 1930. Medical Section

*Action of Hepatotherapy, Mountain Climate and Epinephrine in Person Deprived of Spleen Owing to Splenic, Hemolytic Perniciosiform Anemia. E. Greppi.—p. 253.
Atrophy of Liver and Renal Alterations. G. Bompiani.—p. 266.
Pancreatic Secretions. R. Carusi.—p. 289.
*Alopecia: Etiology and Pathogenesis. G. Sannicandro.—p. 298.

Hepatotherapy, Mountain Climate and Epinephrine in Treatment of Person Deprived of Spleen.—Greppi reports the case of a splenectomized person who presented a perniciosiform syndrome in remission (hyperchromatic macrocytosis with moderate hemolysis, high equilibrium of the blood crasis). He gives various observations on the effects of hepatotherapy, sojourn in mountain regions, and epinephrine: 1. The liver treatment by mouth developed a typical double action, serving as a stimulus to hematopoiesis and a check on hemolysis, although it did not overcome the marked tendency to macrocytosis. 2. The sojourn in a mountainous region (3,000 meters), in a condition of physical rest, was characterized by the absence of initial hyperglobulia (defective mobilization of reserves of erythrocytes), and yet there was a marked progressive stimulation of hematopoiesis with a special tendency to microcytosis. The marked afflux of cells of small volume in the circulating blood counterbalanced the macrocytosis, establishing an equilibrium between the quantity of pigment and the number and volume of the blood cells, lowering for the first time the cell values to the normal level. The effects of the mountain climate on the blood picture disappeared in a short time after the patient returned to his usual environment. 3. The epinephrine test, in turn, revealed the absence of any mobilizing action on the distribution of the erythrocytes, whereas the leukocytes showed an interesting increase, especially the granulocytes (disappearance of the leukocyte reaction observed during the first interval after splenectomy).

Alopecia: Etiology and Pathogenesis.—Sannicandro summarizes his observations on eighty patients with alopecia (three cases due to seborrhea, four cases of alopecia universalis, and seventy-three cases of alopecia areata in its various forms). In a number of cases there was a dystonia vagosympatica, clearly referable in some instances to thyroid dysfunctioning, as was shown by organotherapy. This causal relation was confirmed by the absence in the subjects examined of any other morbid symptom discoverable by our means of biologic and clinical research. While the lack of therapeutic success from the administration of other glandular preparations when thyroid organotherapy failed does not of course exclude the possible importance of the hypophysis, the ovary and the suprarenals in the genesis of alopecia areata, it tends to confirm the involvement of the thyroid. It would appear that alopecia universalis may be due to an acquired syphilitic infection, being a late symptom associated pathogenically with dysthyroidism. A few cases of alopecia are doubtless due to a congenital spirochetal infection. In three cases of alopecia due to seborrhea, doubtless associated with sexual evolution, no benefit was derived from organotherapy, which fact would seem to point to hereditary factors. The primary cause of alopecia is frequently syphilis, especially the congenital type, a secondary mechanism being of an endocrine (thyroid) or endocrinosympathetic nature.

37: 797-832 (June 2) 1930. Practical Section

*Treatment of Postoperative Retention of Urine. E. Fiorini.—p. 797.
*Remarks on Perforations of Gastric and Duodenal Ulcers. B. Guaraldi.—p. 801.

Treatment of Postoperative Retention of Urine.—Fiorini has treated postoperative retention of urine by various methods. In almost all cases he was able to dispense with the use of a catheter. The intravesical introduction of a 20 per cent solution of glycerin and boric acid proved to be irritating. Intravenous injections of methenamine were found to be ineffective. Injections of calcium chloride, although effective, presented certain disadvantages. Of all the substances used, the most effective and the least harmful was found to be pilocarpine, injected intravenously, an average dose being 8 mg. Or it may be introduced as a clyster, in doses of 0.03 Gm. This treatment was successful in 92 per cent of the cases.

Perforations of Gastric and Duodenal Ulcers.—Guaraldi describes several cases of gastric and of duodenal ulcer resulting in perforation, considering especially the symptomatology. He emphasizes the differential diagnosis as against various acute abdominal disorders, particularly appendicitis. He stresses also the search in the personal history for evidence of a painful contracture of the diaphragm, which is revealed clinically by difficult respiration, in order to establish a more exact diagnosis and to expedite operative intervention.

37: 869-904 (June 16) 1930. Practical Section

Ileus Paralyticus Due Probably to Atypical Ileocolotyphoid, with Ileocolic Ulcers and Meckel's Diverticulum: Postoperative Perforation of Ileac Ulcer: Death. O. Cantelmo.—p. 869.
*Treatment of Gastric Ulcer by Schiassi Method. P. Adreani.—p. 873.
A New Test for Sugar, Capable of Revealing Minimal Quantities in Humors of Organism. E. Pittarelli.—p. 877.
New Apparatus for Transfusion of Blood. P. Frassineti.—p. 879.

Treatment of Gastric Ulcer by Schiassi Method.—Adreani describes a case in which, the patient having been operated on twice for gastric ulcer, first with gastro-enterostomy and a second time with partial resection, a third intervention was resorted to, a complete and lasting recovery being secured by the Schiassi method. The small number of operations performed thus far prevents the drawing of any final conclusions as to the value of the method, although Adreani thinks that it deserves consideration.

Beiträge zur Klinik der Tuberkulose, Berlin

73: 657-840 (April 23) 1930

*The Lung as a Contractile Organ. A. Luisada.—p. 657.
Disseminated Tuberculosis: Torpid Forms. L. Hantschmann.—p. 688.
Collapse Therapy: Prognosis. H. Jessen.—p. 710.
Bilateral Collapse Treatment of Pulmonary Tuberculosis. J. Leitner.—p. 718.
Vital Capacity in Collapse and Rest Treatments. K. Kochs.—p. 734.
Antigen Analysis of Tubercle Bacillus. M. Pinner.—p. 784.
Endocrine System: Changes and Structure in Tuberculosis. W. Stefko and M. Tscherokowa.—p. 791.
Pleuritis: Classification of Forms on Basis of Roentgen Changes. A. Pies.—p. 799.
*Gerson-Sauerbruch-Herrmannsdorfer Diet in Pulmonary Tuberculosis. W. Sachs.—p. 816.
*Gerson Diet in Tuberculosis of Skin and Mucous Membranes. P. Wichmann.—p. 825.
*Gerson-Sauerbruch Diet in Tuberculosis. A. Wolff-Eisner.—p. 829.
*Hemorrhage into Cavity of Lung. Hochstetter.—p. 835.

The Lung as a Contractile Organ.—According to Luisada, the classic conception of the physiology of the lung (in which it is considered to possess only the property of elasticity) suffices less and less to explain the various pathologic changes that accompany modifications in its form and volume. Massive

collapse of the lung, pulmonary edema, bronchiectasis, and the behavior of the lung in pneumothorax, in hydrothorax and in attacks of bronchial asthma are all pathologic conditions that it is difficult to reconcile with the classic theory. To explain these, all the possible hypotheses had already been exhausted and therefore it was necessary to introduce a new factor, designated by various terms as vital power of the lung, retraction power of the lung, active retraction, active dilatation and so on. The terms prove that a modification of the conception concerning the physiopathology of the lung was considered necessary. Some authors even went so far as to presuppose contractility of the elastic fibers; in the light of present knowledge, however, this view seems untenable. The author describes a series of experiments on the electrical manifestations of the lung that he performed to complete the present conception with regard to the physiology and pathology of the smooth muscle of the lung and to obtain more sensitive methods for the study of the function of these muscles. First he studied isolated lungs, which produce electrical waves, particularly when they are stretched. Living organisms were next studied; electrograms of the smooth muscle of the lung were made in animals with an open thorax. As his technic improved and after he had carried out systematic studies on the various kinds of conduction he gradually succeeded in diminishing the ampltitude of the electrocardiogram and in registering almost alone the electrical curve of the lung; finally he succeeded in registering this curve in animals with a closed thorax by laying one electrode on the trachea and introducing the other into a small bronchus. By means of control experiments he demonstrated convincingly that the electrical curve obtained in this manner was produced exclusively by the smooth musculature of the bronchi and lungs and therefore might correctly be designated as an "electrobronchogram." Physiologic studies showed that the electrogram produced by the action currents of the smooth bronchopulmonary musculature registered the tonic and clonic contractions of the bronchi and lung. The contraction amplitude corresponded to the respiratory amplitude and rhythm, particularly, however, to the autonomic changes in the contractility of the lung. The author also studied the effects on the electrobronchogram of division of the vagus nerves, stimulation of the vagus and sympathetic nerves, the administration of various medicaments that act on the neurosympathetic system and on the smooth muscle, and the action of various toxic substances. The studies showed conclusively that the lung is a contractile organ and that its musculature undergoes periodic contractions that favor the completion of the expiratory phases. The author also performed a series of experiments on animals with experimental and anaphylactic shock; he noted constantly an increase in the contraction of the smooth musculature and in addition a dysergia between the smooth and striated musculatures of the respiratory apparatus. Occasionally, on the contrary, he noted hypertonic conditions. To complete the study the technic was modified so that it could be used on man, and electrobronchograms of normal human beings were made.

Gerson-Sauerbruch-Herrmannsdorfer Diet in Pulmonary Tuberculosis.—Over a period of three and one-fourth years, Sachs treated 184 persons with pulmonary tuberculosis by means of the Gerson-Sauerbruch-Herrmannsdorfer low salt diet. On the basis of his observations he states that this new dietary does not represent a definite advance in the treatment of pulmonary tuberculosis.

Gerson Diet in Tuberculosis of Skin and Mucous Membranes.—Wichmann calls attention to the objectionable features of the Gerson diet in tuberculosis of the skin and mucous membranes and reports two cases of lupus vulgaris of the skin and mucous membrane of the nose in which, under this form of treatment, the condition grew worse and necessitated a return to local treatment.

Gerson-Sauerbruch Diet in Tuberculosis.—Wolff-Eisner believes that one great disadvantage of the Gerson-Sauerbruch diet in the treatment of tuberculosis is that it combines four or five principles of treatment, with the result that it is impossible to decide which of the factors (low sodium chloride content, administration of minerals, low carbohydrate content, overfeeding, administration of uncooked food rich in vitamins, and the administration of phosphorus in cod liver oil) is the most important. He believes that from both the theoretical and the practical standpoints the results that have been obtained with the diet are not encouraging.

Hemorrhage into Cavity in Lung.—Hochstetter reports a case of hemorrhage into a cavity in the lung followed by the coughing up of a hard blood clot 3 by 6 cm. and death from cerebral air embolism from the cavity.

Klinische Wochenschrift, Berlin

9: 1057-1104 (June 7) 1930

Metabolic Relations of Liver to Muscle and Kidney. A. Gottschalk.—p. 1057.
Metabolism of Leukemic Lymphocytes. E. Peschel.—p. 1061.
Catalytic Action of Oxidized Epinephrine. E. Kisch.—p. 1062.
Pathogenesis of Rous Sarcoma. E. Fränkel.—p. 1064.
*Pernicious Anemia and Similar Conditions. R. Meissner.—p. 1066.
Symptomatic Polyglobulism and Liver Therapy: Pathogenesis of Pernicious Anemia. R. Stephan.—p. 1068.
Treatment of Multiple Sclerosis. M. Nothmann.—p. 1072.
Influence of Viosterol on Animal Organism. R. Vara-Lopez.—p. 1072.
Citochol Reaction According to Sachs and Witebsky as Method for Serodiagnosis of Syphilis. J. A. Finkelstein and W. G. Aristow.—p. 1073.
Effects of Sojourn in High Mountains on Weak Children. M. Heinz.—p. 1076.
Apparent Absence of Receptor A in Group AB. O. Thomsen.—p. 1078.

Pernicious Anemia and Similar Conditions.—Meissner stresses that if conditions similar to pernicious anemia are to be differentiated from true pernicious anemia, then the diagnosis of pernicious anemia should be made with greater reserve; if not, all anemias with a high color index should be considered pernicious anemia. The proposition of Morawitz and Pappenheim to classify the condition resembling pernicious anemia according to the etiologic factors, rather than according to the reactions of the organs, is significant because a considerable number of conditions that may cause anemia are already known, as helminthiasis, syphilis, sepsis, malignant tumors, pregnancy, hyperfunction of the thyroid and, as in the case described by the author, tuberculosis. Among the various forms of anemic conditions resembling pernicious anemia, the forms with strong stimulation of the leukopoietic system should be distinguished from the forms without essential changes in the leukocyte picture. Whether cases of anemia with strong stimulation of the leukopoiesis should still be designated with the not entirely correct term of leukanemia deserves further consideration. The author suggests such terms as pernicious leukocytosis, pernicious leukemoid and leukemic erythropenia. He asserts that anemia cases with stimulation of the leukopoietic system are not at all uncommon. He reports one case that was unusual because of the simultaneous existence of an open pulmonary tuberculosis.

Medizinische Klinik, Berlin

26: 837-878 (June 6) 1930

Diagnosis and Treatment of Tuberculous Caverns. H. Ulrici.—p. 837.
Masked General Symptoms of Tuberculosis. G. Liebermeister.—p. 839.
New Methods for Combating Tuberculosis. H. von Hayek.—p. 842.
Masked Forms of Lymphohematogenic Phthisis. W. Starlinger.—p. 843.
Diagnosis of Tuberculosis of Middle Ear During Childhood. J. Bauer.—p. 847.
*Tuberculous Meningitis. S. Engel.—p. 848.
Cures in Tuberculous Catarrhal Pneumonia. I. Zadek.—p. 850.
Relation Between Bronchiectasis and Tuberculosis. G. Simon.—p. 852.
*Percutaneous Tuberculin Reaction Preferable to Cutaneous Test. E. Unshelm.—p. 854.
Significance of Specific Immunity for Pathogenesis and Course of Human Tuberculosis. B. Lange.—p. 855.

Tuberculous Meningitis.—Engel reports his observations on seventy-six cases of tuberculous meningitis. He asserts that the disease is most frequent during the first two years of life. In spite of the fact that in later years tuberculous infections become more frequent, tuberculous meningitis becomes rarer. Concerning the symptomatology of tuberculous meningitis, the author states that it varies somewhat in the different age groups. Most textbooks that describe tuberculous meningitis discuss the symptoms that become manifest in older children. The author, however, emphasizes the symptoms that characterize tuberculous meningitis in young children, especially vomiting and convulsions. He then discusses methods that are helpful in the differential diagnosis. In consideration of the fact that the beginning period with its uncertain symptoms may be of long duration, objective methods should be employed to make a correct diagnosis possible. The author recommends

the intracutaneous tuberculin test, roentgenoscopy, the determination of increased dermographism, and the examination of the cerebrospinal fluid. It should be considered that during the beginning stage of tuberculous meningitis the cerebral symptoms may be absent.

Percutaneous Tuberculin Reaction Preferable to Cutaneous Test.—Unshelm investigated the reliability of the various tuberculin tests. He comes to the conclusion that the percutaneous tuberculin test according to Hamburger and Widowitz is superior to Pirquet's reaction. Nevertheless, this percutaneous test has certain shortcomings and in doubtful cases a second test should be made. In some instances the intracutaneous test will be necessary.

Strahlentherapie, Berlin

36: 599-828 (May 31) 1930

Modern Meteorology in Relation to Thalassotherapy. E. Hasché.—p. 599.
Surgical Tuberculosis: Thalassotherapy in Danzig. G. Büttner.—p. 617.
Thalassotherapy in Relation to Heliotherapy and Climatic Factors. G. Ceresole.—p. 641.
Characteristics of Atoms as Shown by Roentgen Rays. R. Glocker.—p. 660.
Actinotherapy in Gynecology. F. Seisser.—p. 671.
Late Injury of Fetus by Indirect Action of Radium Rays. F. Dautwitz.—p. 686.
*Diseases of Tonsils: Roentgen Treatment. G. Schulte.—p. 708.
*Ergosterol: Activation with Roentgen Rays. K. Brummer.—p. 716.
Exclusion of Light by Stratum Corneum of Epidermis. L. Freund.—p. 721.
*Hypertrichosis: Late Injury Following Roentgen Epilation. K. Hoede.—p. 727.
Roentgen Cataract: Significance and Prevention. M. Cremer.—p. 732.
Catalase and Lipase Contents of Blood During Roentgen Treatment. M. J. Goldstein and J. P. Neworoschkin.—p. 736.
Roentgen Sensitization: Sensitizing Action of Thorium Nitrate. S. A. Nikitin.—p. 745.
Measurement of Roentgen Rays by Means of Luminescence. E. Björling.—p. 751.
Reproducibility of Roentgen Unit. H. Behnken and R. Jaeger.—p. 778.
Standardization of Infraroentgen (Grenz) Ray Tubes. O. Gfrörer.—p. 786.
Vitalux Lamp: Biologic Demonstration of Ultraviolet Radiation. L. Böhmer.—p. 805.
Cancer of Tonsil: Radium Treatment. H. Kenan.—p. 807.

Diseases of Tonsils: Indications for Roentgen Treatment.—Schulte enumerates the conditions in which roentgen treatment of the tonsils is indicated thus: (1) if anesthesia or operation is contraindicated; (2) if because of arteriosclerosis a secondary hemorrhage is to be feared; (3) if the tonsils are infected, with the result that an operation might disseminate the bacteria and cause a lung abscess, septicemia or endocarditis; (4) if the regional lymph nodes are infected; (5) if the patient has a chronic cardiac disturbance, diabetes, exophthalmic goiter, chorea, rheumatism, hemophilia, asthma, tuberculosis, status lymphaticus or any disease that greatly lowers the bodily resistance; (6) if the patient has frequent attacks of peritonsillar abscess; (7) if the patient is a singer or a public speaker and has frequent attacks of sore throat and catarrh, and (8) if frequent attacks of sore throat and catarrh occur following tonsillectomy.

Ergosterol: Activation with Roentgen Rays.—Brummer describes experiments whose results refute the dogma that roentgen rays do not act specifically. White rats weighing from 40 to 60 Gm. were rendered rachitic by a vitamin-free diet. After three weeks a roentgenogram of each animal was made to determine whether or not it was rachitic. Some of the rachitic animals were placed on a diet containing ergosterol that had been activated by means of "soft" roentgen rays (0.0006 mg. of ergosterol was given daily to each animal). For control, another series of animals was placed on the same diet but instead of being given irradiated ergosterol they were given the same daily dose of nonirradiated ergosterol. After three weeks the animals that had been receiving ergosterol irradiated with roentgen rays showed no traces of rickets and they had gained in weight from 20 to 30 Gm. The control animals, on the contrary, showed marked signs of rickets and two of them died from this condition even after they had been on the diet for only three weeks.

Hypertrichosis: Roentgen Epilation.—Hoede reports two cases of late injury following roentgen epilation in women for hypertrichosis. The injury did not appear until almost four and nine years later, respectively, and in both instances it was more disfiguring than the hypertrichosis had been. In one of the patients an extremely painful and persistent ulcer had formed. On the basis of his experience in the two cases the author believes that, in epilation for hypertrichosis, roentgen rays should be used only as a last resort. He also believes that a reliable opinion with regard to the final result in roentgen irradiation in hypertrichosis cannot be formed until after a period of observation of ten years.

Wiener klinische Wochenschrift, Vienna

43: 705-736 (June 5) 1930

*Radium Therapy in Diseases of Blood. N. Jagić and G. Spengler.—p. 705.
Technic of Radium Treatment in Diseases of Blood. L. Arzt.—p. 708.
Anesthesia with Tribromethanol as Base. L. Flamm.—p. 709.
Manganous Chloride in Therapy of Bronchitis. L. Vajda.—p. 711.
Tonus-Power Index in Muscles of Fingers. E. A. Spiegel and G. Zellmann.—p. 712.
Leukosarcomatosis. C. Sternberg.—p. 714.
Evolutions of Physical Therapy. A. Strasser.—p. 716.
Clinical Aspect of "Infectious Mononucleosis." A. Vogl.—p. 720.

Radium Therapy in Diseases of Blood.—For the treatment of disorders in the blood-forming centers, Jagić and Spengler employed in the course of recent years besides roentgen irradiation also radium therapy. They come to the conclusion that in the various forms of leukemia and in lymphogranulomatosis radium irradiation brings the same results as roentgen treatment. It is not possible to cure these diseases by means of radiation therapy, and it is also doubtful whether a prolongation of life can be effected; but in spite of this, radiation therapy should be resorted to when it is necessary to overcome enlargement of the spleen, liver and lymph nodes, especially when these conditions cause compression of the neighboring organs. In the irradiation, overdosage should be avoided. It is of less importance that the number of leukocytes be decreased rapidly as that the patients feel better and that swelling of the spleen and lymph nodes be reduced. The fact that radium therapy influences the leukocyte picture less rapidly than roentgen treatment is according to the authors' opinion not a disadvantage. The erythrocytes are favorably influenced by radium rays, and in cases with anemia radium treatment should be given. It was found that the enlargement of the spleen and the lymph nodes and the blood picture are influenced more slowly by radium rays then by roentgen rays. However, the general condition improves more quickly. Of especial significance is the fact that during radium treatment disturbances of the general condition do not appear. For this reason radium treatment is sometimes preferable to roentgen irradiation. In discussing the indications for radium therapy and for roentgen rays, the authors state the following: In cases in which quick relief is necessary, as for instance in large mediastinal tumors that cause compression of the respiratory passages, roentgen rays should be resorted to. When minor enlargements of the lymph nodes exist, and in advanced cases of leukemia and lymphogranulomatosis with anemia and cachexia, radium treatment is preferable. In myelocytic leukemia it is advisable to irradiate larger portions of the bone marrow, whereas in leukemic lymphomatosis and in lymphogranulomatosis a more local irradiation is desirable. Accordingly, in myelocytic leukemia roentgen irradiation is generally advisable except in the cases with severe anemia and cachexia.

Zentralblatt für Gynäkologie, Leipzig

54: 1409-1472 (June 7) 1930. Partial Index

*Rectus Suture in Median Laparotomy Incisions. W. Latzko.—p. 1410.
*Homologous Immunization and Paternity Diagnosis According to Zangemeister. H. Rupp.—p. 1414.
Absence of Inhibition of Growth of Cress Seeds Under Influence of Blood from Patients with Eclampsia. M. Rodecurt.—p. 1418.
Spontaneous Endometrioid Glandular Proliferation in Ovary. R. Joachimovits.—p. 1419.
Abscess of Portio Vaginalis. M. Trancu-Rainer.—p. 1422.
Copper Catgut: Tests Proving That It is not Sterile. W. Rosenthal.—p. 1425.

Rectus Suture in Median Laparotomy Incisions.—Latzko calls attention to a method of rectus suture that was first introduced by Gersuny. The author has employed this method for a number of years and has found it especially

helpful in surgery of diastasis recti abdominis, in umbilical hernias and in postoperative abdominal hernias. He explains the technic of the method and gives photographs of the various phases.

Homologous Immunization and Paternity Diagnosis According to Zangemeister.—Rupp points out that the serologic changes that become manifest in Zangemeister's test for the determination of paternity are as yet not entirely clear. At first it was assumed that immunity processes were the foundations of this reaction. However, certain observations, especially the fact that the reaction is the same when the test is performed in the nursling as when done when the child has grown up, convinced the author that the reaction is not a mere immunity process. He made experiments on rabbits that had been immunized against protein from horses. His tests did not indicate that homologous, homogenous proteins produce antibodies, and the investigations did not prove the existence of iso-antibodies. This is of interest not only for the biology of immunity but also for theories on the relation between mother and child. The results of the tests make it appear doubtful whether the paternity reaction is based on immunity processes. In the conclusion the author states that, although the nature of Zangemeister's paternity reaction has not been explained, this fact does not diminish the practical value of the test. However, the number of reactions is as yet not large enough to permit a final statement regarding the specificity of the test.

Klinicheskaya Meditsina, Moscow

8: 49-112 (Jan.) 1930

Methods of Studying Protease Content of Blood Serum and Its Importance. O. I. Sokolnikov.—p. 64.
Action of Albugin in Diabetes Mellitus. V. M. Karatygin.—p. 69.
Phosphorus Found in Urine in Diabetes and Influence of Insulin on Such a Condition. A. Parchomova.—p. 76.
*Importance of Fats in Ketogenesis in Diabetic and in Normal Persons. M. Y. Kalf-Kalif.—p. 80.

Importance of Fats in Ketogenesis in Diabetic and in Normal Persons.—Kalf-Kalif concludes that the difference between the influence of fats on ketogenesis in diabetic and in normal persons is small in some cases whereas in some it is great. Although an extensive study was made, it did not enable the author to draw definite conclusions regarding the harm or good fat does in diabetes.

8: 161-224 (Feb.) 1930

*Angina Pectoris: Treatment. Y. S. Shvartsman.—p. 174.
Merbaphen: Diuretic Action. P. S. Sacharov.—p. 179.
Aortic Insufficiency. L. V. Isaev.—p. 186.
Heart in Invalids. V. F. Zelenin and M. N. Ter-Makaryan.—p. 193.

Angina Pectoris: Treatment.—Shvartsman gave injections of extract of skeletal muscles to seven persons with angina pectoris. The first day, 1 cc. of extract was injected and the chest pains were relieved; the second day, 2 cc. was injected and the pains ceased for a period of three days and the patients who were previously unable to walk now walked comfortably. Each injection produced complete relief for a period of from two to four days. The extract may be administered either hypodermically or by mouth. With a hypodermic injection, favorable results are obtained in from one and one-half to two hours.

Hospitalstidende, Copenhagen

73: 571-598 (May 22) 1930

*Vaccination of Nurses Against Tuberculosis. J. Heimbeck.—p. 571.
*Morbidity from Tuberculosis Among Nurses in Training School. E. Meulengracht.—p. 579.
*Practical Value of Urethrography. O. Keller.—p. 583.

Vaccination of Nurses Against Tuberculosis.—Heimbeck's results in Ullevål Hospital in Oslo show that prophylactic subcutaneous B C G vaccination gives an exceedingly effective immunity against tuberculosis.

Morbidity from Tuberculosis Among Nurses in Training School.—Meulengracht's data indicate that tuberculosis occurs in from 5 to 6.2 per cent of the nurses in a Danish training school; if erythema nodosum is included, it occurs in about 7 per cent.

Practical Value of Urethrography.—In Keller's opinion the practical value of urethrography is extremely limited.

73: 599-610 (May 29) 1930

*Clinical Definition of Pernicious Anemia. S. A. Holbøll.—p. 599.

Clinical Definition of Pernicious Anemia.—Holbøll states that true pernicious anemia is distinguished by pronounced achylia and it is rarely seen before the age of 32. Apparent improvement after liver therapy is not a sufficient basis for the diagnosis of pernicious anemia. Although the pernicious-like anemias of pregnancy and syphilis sometimes respond to liver treatment, they differ from pernicious anemia in their reaction to liver treatment, particularly in their reticulocyte reaction.

Ugeskrift for Læger, Copenhagen

92: 467-486 (May 15) 1930

*Pernicious Anemia: Treatment with Desiccated Stomach. K. Faber.—p. 467.
*Serologic Group Differentiation of Organism: Urine. O. Thomsen.—p. 468.
Hemorrhoids: Treatment. V. Meisen.—p. 470.
Lupus: Ambulant Treatment. P. Lersey.—p. 474.

Pernicious Anemia: Treatment with Desiccated Stomach.—In Faber's case of typical pernicious anemia with achylia, which had twice responded promptly to liver treatment, the effect of treatment with desiccated stomach was equally favorable; in fact, apparently even more rapid and complete. The erythrocyte count rose from 3,000,000 to 5,000,000.

Serologic Group Differentiation of Organism: Urine.—In the urine of healthy persons Thomsen found receptors, A and B, which specifically inhibited agglutinin anti-A and anti-B in human serums.

92: 487-506 (May 22) 1930

*Burns: Treatment with Tannic Acid. J. M. Wollesen.—p. 487.
*Changes in Blood in Typhoid, Paratyphoid, Undulant Fever and Rubeola. A. Nyfeldt.—p. 491.
*Myelopathy in Pernicious Anemia, Originated During Treatment with Liver Extract. M. Norn.—p. 494.

Burns: Treatment with Tannic Acid.—Five cases are reported by Wollesen.

Changes in Blood in Typhoid, Paratyphoid, Undulant Fever and Rubeola.—Nyfeldt concludes that while hematologic examination does not establish the diagnosis in these diseases, it does advance the diagnosis from a possibility to a probability.

Myelopathy in Pernicious Anemia, During Treatment with Liver Extract.—In Norn's case of pernicious anemia, marked myelopathy appeared about a year after the start of liver treatment and during continued treatment with massive doses of liver. Examination of the blood revealed approximately normal counts.

92: 507-532 (May 29) 1930

*Examinations of Blood in Ulcerous Angina. A. Buch.—p. 507.
*Normal Sedimentation Reaction and Active Tuberculosis. K. Tørning.—p. 510.
*Pernicious Anemia: Treatment with Desiccated Stomach. K. Winge.—p. 511.
Keeping Quality of Standard Fluids. E. Schiødt.—p. 511.
Length of Umbilical Cord. J. Fog.—p. 512.
*Congenital Atresia of Biliary Tract. V. I. Baastrup.—p. 517.

Examinations of Blood in Ulcerous Angina.—Buch reports four cases of an acute febrile infectious disease with ulceronecrotic angina and fusiform bacilli and spirochetes in the ulcerations. The hematologic picture showed transient lymphocytosis with some immature cell forms. He regards the condition as a form of infectious mononucleosis with slight tendency to lymph node enlargement and marked tendency to ulcerous angina, with secondary infection with Vicent's spirilla. In one case the spirilla were not found, in spite of daily examinations, until several days after the appearance of the ulcerations.

Normal Sedimentation Reaction and Active Tuberculosis.—Tørning says that a normal blood sedimentation reaction not only does not exclude active progressive pulmonary tuberculosis but is frequently present in this disease.

Pernicious Anemia: Treatment with Desiccated Stomach.—Treatment with desiccated stomach gave good results in Winge's case.

Congenital Atresia of Biliary Tract.—In Baastrup's case in an infant there was jaundice due to complete obstruction, with marked chronic interstitial hepatitis. Schlesinger's test for urobilin in the urine gave negative results.